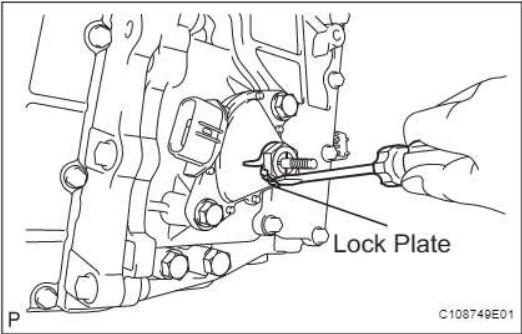
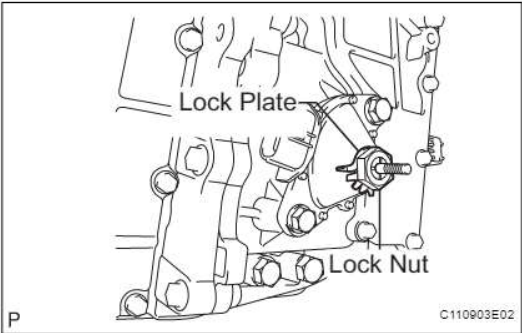


P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER POSITION SENSOR

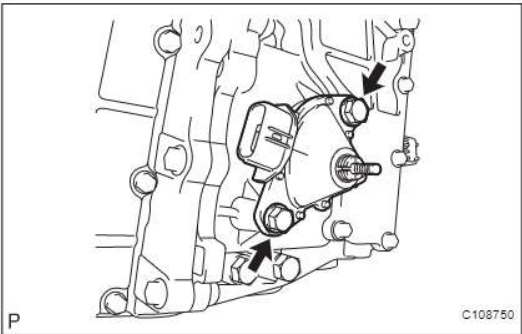
HX-5



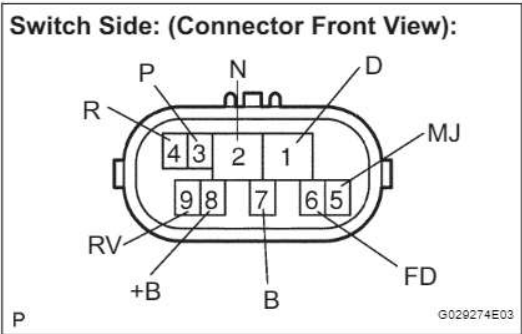
(c) Using a screwdriver, pry the tabs of the lock plate.



(d) Remove the lock nut and lock plate.



(e) Remove the 2 bolts and pull out the shift lever position sensor.



- INSPECTION**
- 1. INSPECT SHIFT LEVER POSITION SENSOR**
- (a) Measure the resistance according to the value(s) in the table below when the shift lever is moved to each position.

Standard resistance

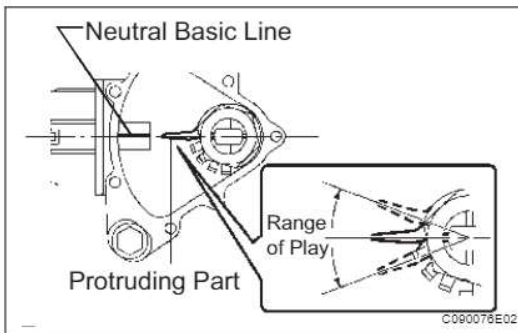
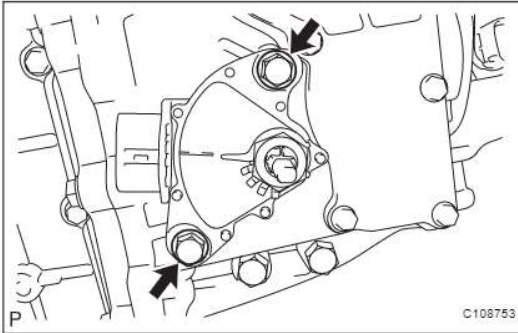
	8 (+B) - 1 (D)	8 (+B) - 2 (N)	8 (+B) - 3 (P)	8 (+B) - 4 (R)	8 (+B) - 5 (MJ)	8 (+B) - 6 (FD)	8 (+B) - 7 (B)	8 (+B) - 9 (RV)
P position	10 kΩ or higher	4.2 to 5.1 kΩ	Below 1 Ω	10 kΩ or higher	Below 1 Ω	10 kΩ or higher	10 kΩ or higher	10 kΩ or higher
R position	10 kΩ or higher	4.2 to 5.1 kΩ	10 kΩ or higher	Below 1 Ω	Below 1 Ω	10 kΩ or higher	10 kΩ or higher	Below 1 Ω
N position	10 kΩ or higher	Below 1 Ω	10 kΩ or higher	10 kΩ or higher	Below 1 Ω	10 kΩ or higher	10 kΩ or higher	10 kΩ or higher
D position	Below 1 Ω	4.2 to 5.1 kΩ	10 kΩ or higher	10 kΩ or higher	Below 1 Ω	Below 1 Ω	10 kΩ or higher	10 kΩ or higher
B position	10 kΩ or higher	4.2 to 5.1 kΩ	10 kΩ or higher	10 kΩ or higher	Below 1 Ω	Below 1 Ω	Below 1 Ω	10 kΩ or higher

HX-6**P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER POSITION SENSOR**

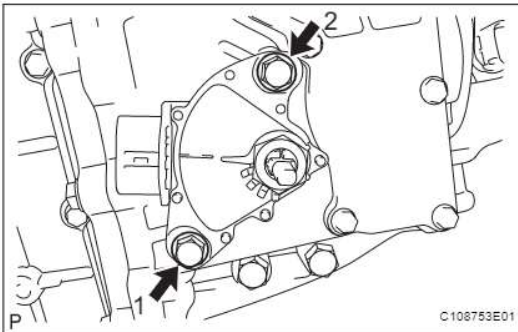
If operation cannot be done as specified, replace the shift lever position sensor.

ADJUSTMENT**1. ADJUST SHIFT LEVER POSITION SENSOR**

- (a) Loosen the 2 bolts of the shift lever position sensor and set the shift lever to the N position.



- (b) Align the protruding part with the neutral basic line.
NOTICE:
 There is play on the nut stopper side (protruding part). Align the center point of the range of the play with the neutral basic line.



- (c) Tighten the 2 bolts in the order shown in the illustration.

Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)

2. INSPECT SHIFT LEVER POSITION SENSOR (See page [HX-5](#))**HX**

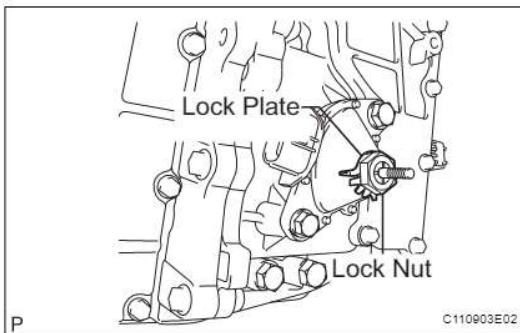
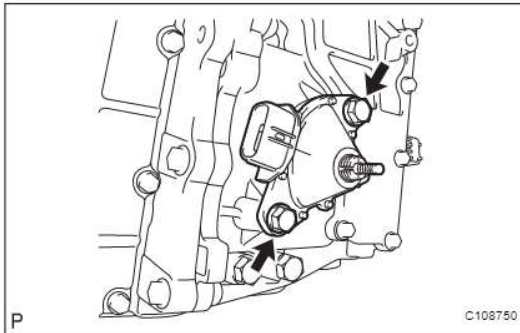
P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER POSITION SENSOR

HX-7

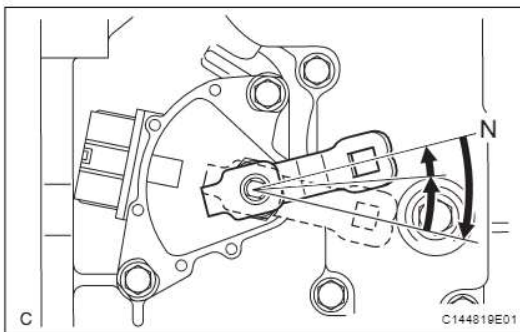
INSTALLATION

1. INSTALL SHIFT LEVER POSITION SENSOR

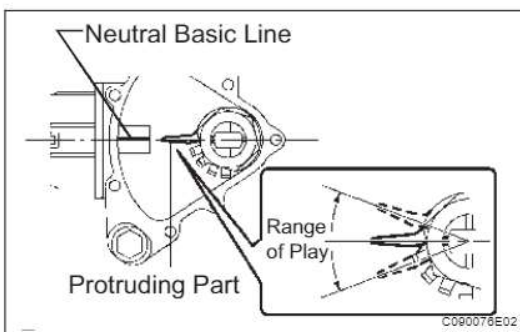
- (a) Install the shift lever position sensor to the manual valve shaft.
- (b) Temporarily install the 2 bolts.



- (c) Install a new lock plate and tighten the nut.
Torque: 6.9 N*m (70 kgf*cm, 61 in.*lbf)
- (d) Temporarily install the control shaft lever.



- (e) Turn the lever clockwise until it stops, then turn it counterclockwise 2 notches.
- (f) Remove the control shaft lever.

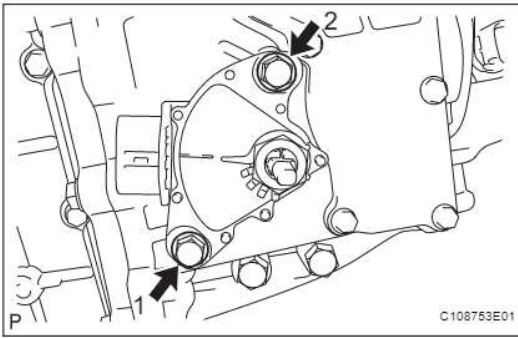


- (g) Align the protruding part with the neutral basic line.
NOTICE:
There is play on the nut stopper side (protruding part). Align the center point of the range of the play with the neutral basic line.

HX

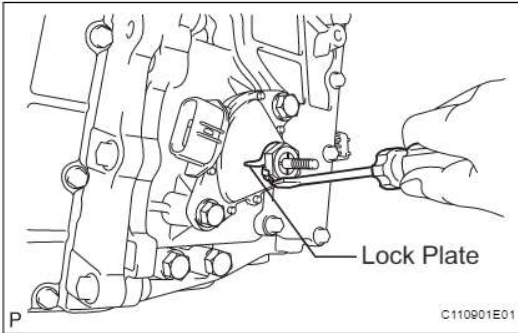
HX-8

P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER POSITION SENSOR

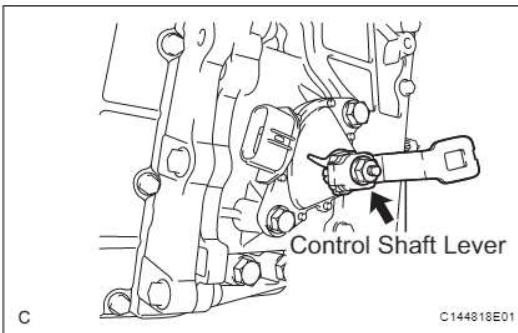


- (h) Tighten the 2 bolts in the order shown in the illustration.

Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)



- (i) Using a screwdriver, secure the nut with the lock plate.

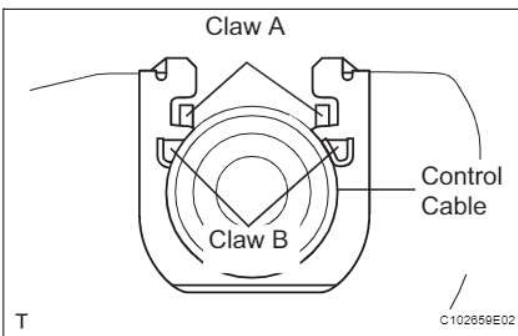


- (j) Install the control shaft lever, washer, and nut.

Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)

2. CONNECT TRANSMISSION CONTROL CABLE ASSEMBLY

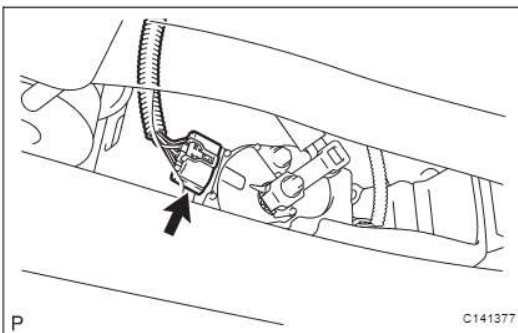
- (a) Move the shift lever to the N position.
(b) Install a new clip to the control bracket.



- (c) Install the transmission control cable assembly to the control bracket.

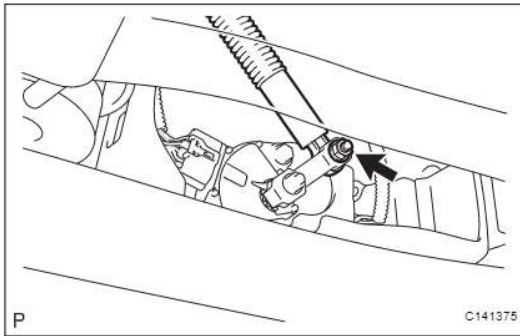
NOTICE:

- Make sure that the A claws on the clip are securely fit into the bracket holes.
- Make sure that the cable is securely installed inside the B claws of the clip.



- (d) Connect the shift lever position sensor connector.
(e) Move the control shaft lever to the N position.

HX

P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER POSITION SENSOR**HX-9**

- (f) Connect the transmission control cable assembly to the control shaft lever with the nut.
Torque: 15 N*m (150 kgf*cm, 11 ft.*lbf)
3. **INSPECT SHIFT LEVER POSITION** (See page [HX-24](#))
 4. **ADJUST SHIFT LEVER POSITION** (See page [HX-26](#))
 5. **ADJUST TRANSMISSION CONTROL CABLE ASSEMBLY** (See page [HX-42](#))
 6. **INSPECT SHIFT LEVER OPERATION** (See page [HX-28](#))
 7. **INSTALL AIR CLEANER INLET ASSEMBLY** (See page [EM-113](#))
 8. **INSTALL ENGINE UNDER COVER LH**
 9. **INSTALL ENGINE UNDER COVER RH**
 10. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)
 11. **PERFORM INITIALIZATION**
 - (a) Perform initialization (See page [IN-43](#)).
NOTICE:
Certain systems need to be initialized after reconnecting the cable to the negative (-) battery terminal.

HX

HX-12 P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID VEHICLE TRANSAXLE ASSEMBLY

REMOVAL

1. REMOVE ENGINE ASSEMBLY WITH TRANSAXLE

HINT:

(See page [EM-89](#))

2. REMOVE DYNAMIC DAMPER (See page [EM-97](#))

3. REMOVE FRONT FRAME ASSEMBLY (See page [EM-97](#))

4. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH (See page [DS-6](#))

5. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH (See page [DS-7](#))

6. REMOVE FLYWHEEL HOUSING UNDER COVER

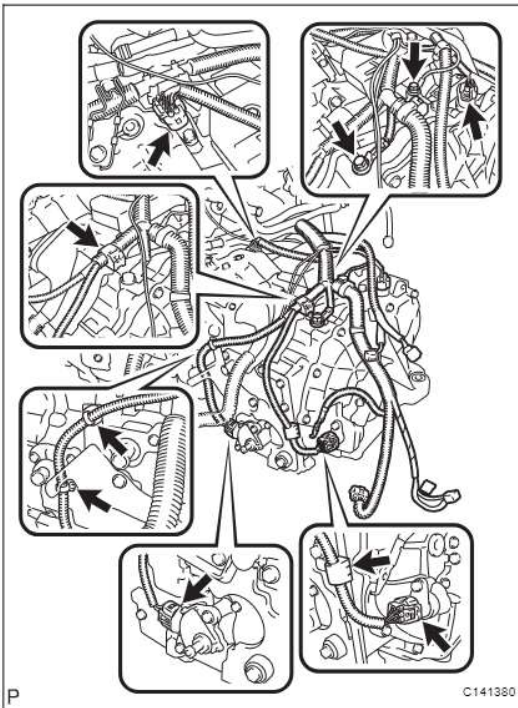
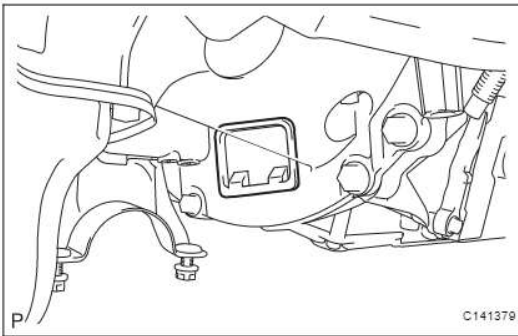
(a) Remove the flywheel housing under cover from the hybrid vehicle transaxle assembly.

7. SEPARATE ENGINE WIRE

(a) Remove the bolt and ground wire.

(b) Disconnect the wire harnesses from the clamps.

(c) Disconnect the connectors.

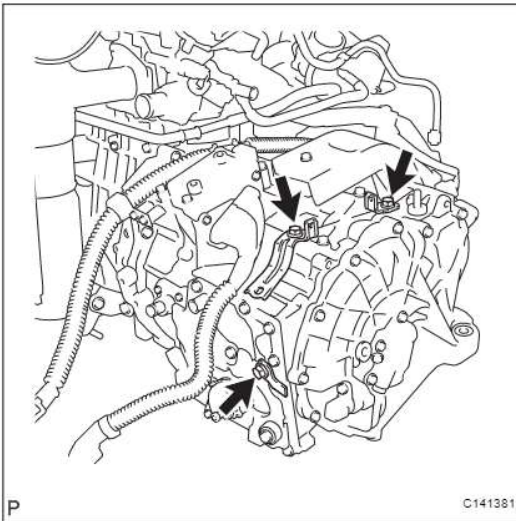


HX

P311 HYBRID TRANSMISSION / TRANSAKLE – HYBRID VEHICLE TRANSAKLE ASSEMBLY

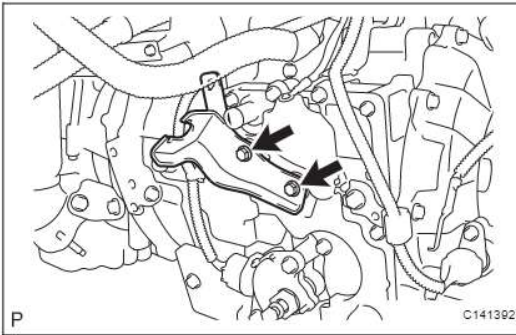
HX-13

(d) Remove the 3 bolts and 3 clamps.



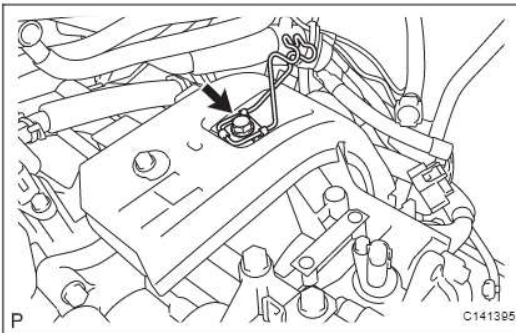
8. REMOVE NO. 1 TRANSMISSION CONTROL CABLE BRACKET

(a) Remove the 2 bolts and No. 1 transmission control cable bracket.



9. REMOVE NO. 2 TRANSMISSION CONTROL CABLE BRACKET

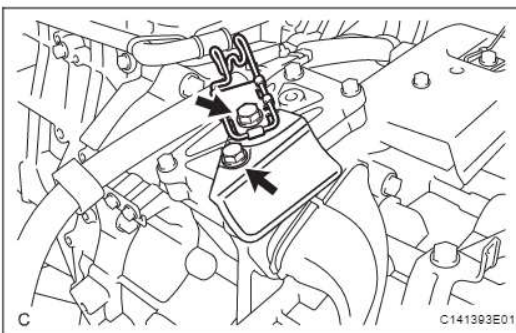
(a) Remove the bolt and No. 2 transmission control cable bracket.



10. REMOVE NO. 3 TRANSMISSION CONTROL CABLE BRACKET

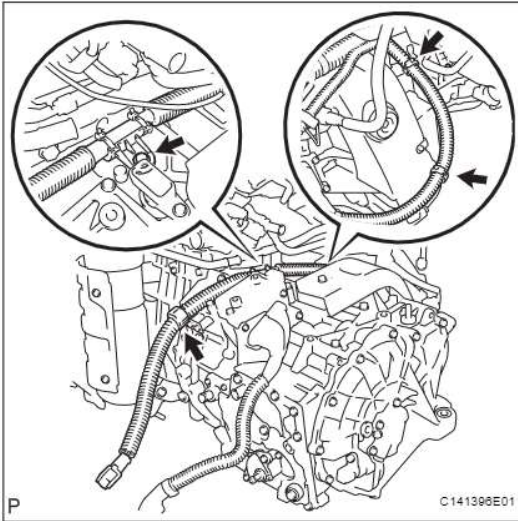
(a) Remove the bolt and No. 3 transmission control cable bracket.

(b) Remove the bolt and HV inverter protector.



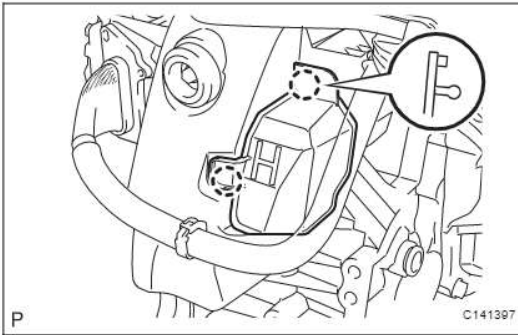
HX

HX-14 P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID VEHICLE TRANSAXLE ASSEMBLY

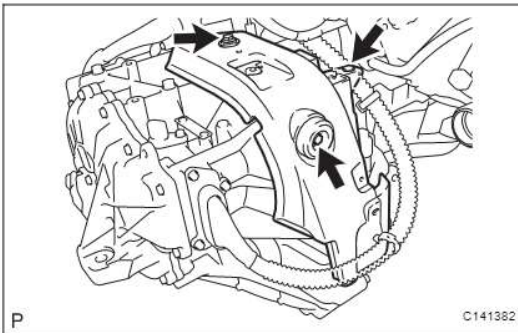


11. REMOVE AUTOMATIC TRANSMISSION CASE COVER

- (a) Remove the bolt from the hybrid transaxle.
- (b) Disconnect the 3 wire harness clamps from the automatic transmission case cover.
- (c) Remove the 2 bolts, and bracket from the hybrid transaxle.



- (d) Remove the transmission case cover.



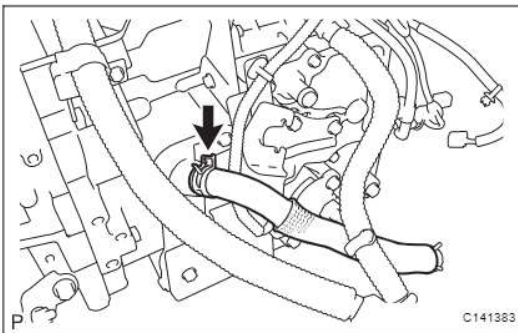
- (e) Remove the 2 bolts, clip, and automatic transmission case cover from the hybrid transaxle.

12. REMOVE HV TRANSAXLE MASS DAMPER

- (a) Remove the HV transaxle mass damper and gasket.

13. REMOVE TRANSMISSION OIL PUMP COVER PLUG

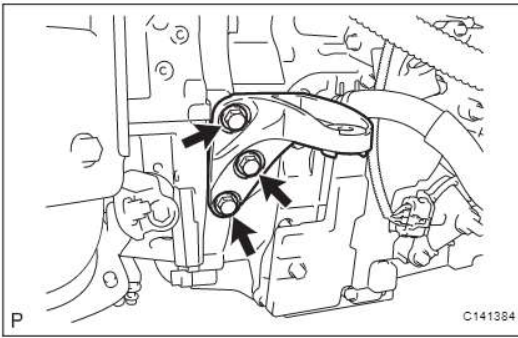
- (a) Remove the 2 transmission oil pump cover plugs and 2 O-rings.



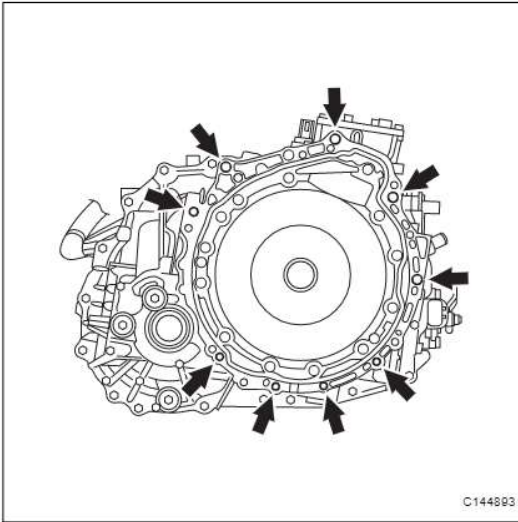
14. REMOVE WATER HOSE

- (a) Disconnect the water hose from the hybrid transaxle.

HX

P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID VEHICLE TRANSAXLE ASSEMBLY**HX-15****15. REMOVE FRONT ENGINE MOUNTING BRACKET**

- (a) Remove the 3 bolts and engine mounting bracket.

**16. REMOVE HYBRID VEHICLE TRANSAXLE ASSEMBLY**

- (a) Remove the 9 bolts.
(b) Separate and remove the hybrid vehicle transaxle.

NOTICE:

Do not pry between the transaxle assembly and engine more than necessary to prevent the knock pin from being damaged.

HX

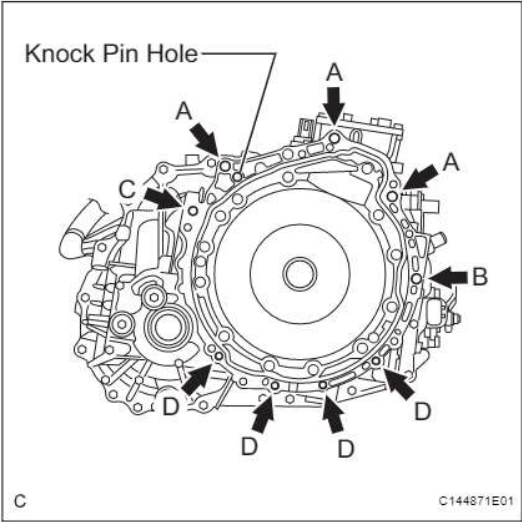
HX-16

P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID VEHICLE TRANSAXLE ASSEMBLY

INSTALLATION

1. INSTALL HYBRID VEHICLE TRANSAXLE ASSEMBLY

- (a) Make sure that the knock pins are installed on the engine.
- (b) Install the hybrid vehicle transaxle and the 9 bolts shown in the illustration to the engine.



- Torque: Bolt A**
64 N*m (653 kgf*cm, 47 ft.*lbf)
- Bolt B**
46 N*m (469 kgf*cm, 34 ft.*lbf)
- Bolt C**
28 N*m (286 kgf*cm, 21 ft.*lbf)
- Bolt D**
44 N*m (450 kgf*cm, 33 ft.*lbf)

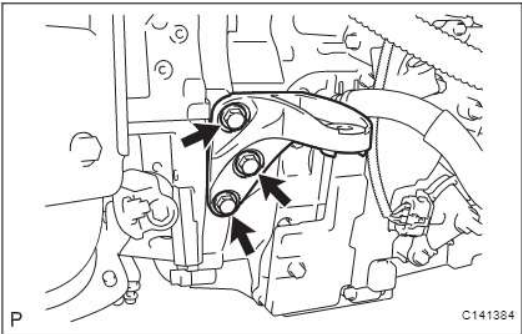
- NOTICE:**
- Do not forcibly pry on the hybrid vehicle transaxle assembly.
 - Do not apply grease either to the spline or to the input shaft.

Bolt	Installation direction	Diameter	Bolt length
A	From transaxle to engine	12 mm (0.47 in.)	55 mm (2.17 in.)
B	From transaxle to engine	10 mm (0.39 in.)	65 mm (2.56 in.)
C	From engine to transaxle	8 mm (0.32 in.)	38 mm (1.47 in.)
D	From engine to transaxle	10 mm (0.39 in.)	32 mm (1.26 in.)

2. INSTALL FRONT ENGINE MOUNTING BRACKET

- (a) Install the front engine mounting bracket with the 3 bolts.

Torque: 64 N*m (653 kgf*cm, 47 ft.*lbf)



3. INSTALL WATER HOSE

- (a) Install the water hose with the clamp.

4. INSTALL TRANSMISSION OIL PUMP COVER PLUG

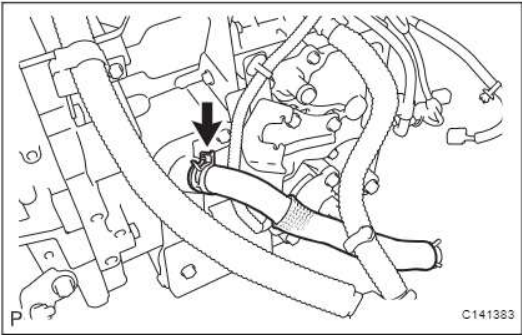
- (a) Install 2 new O-rings and the 2 transmission oil pump cover plugs.

Torque: 27 N*m (275 kgf*cm, 20 ft.*lbf)

5. INSTALL HV TRANSAXLE MASS DAMPER

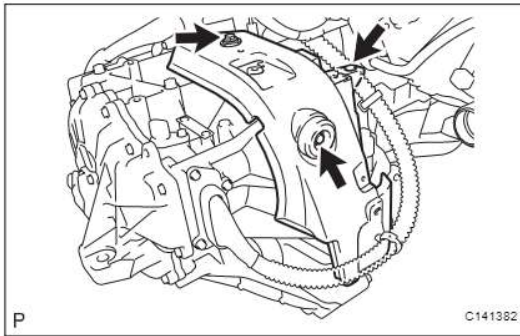
- (a) Install a new gasket and the HV transaxle mass damper.

Torque: 39 N*m (398 kgf*cm, 29 ft.*lbf)



P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID VEHICLE TRANSAXLE ASSEMBLY

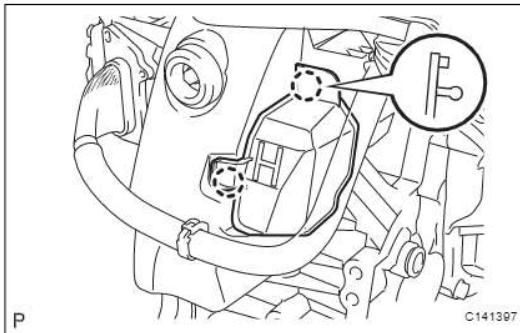
HX-17



6. INSTALL AUTOMATIC TRANSMISSION CASE COVER

- (a) Install the automatic transmission case cover with the 2 bolts and clip.

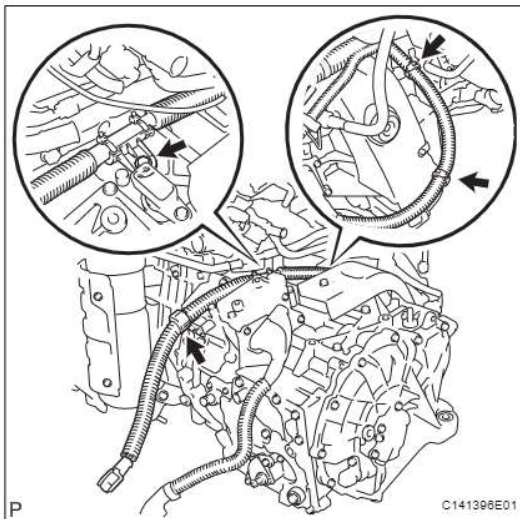
Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)



- (b) Install the transmission case cover.

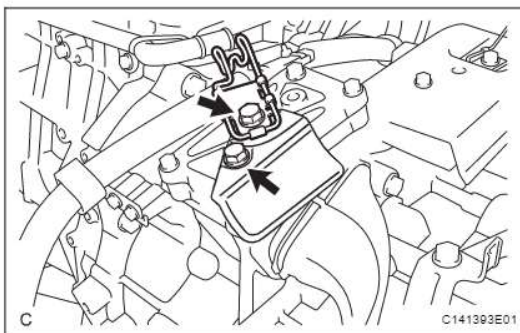
- (c) Install the bracket with the 2 bolts.

Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)



- (d) Connect the wire harness with the bolt and 3 clamps.

Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)



7. INSTALL NO. 3 TRANSMISSION CONTROL CABLE BRACKET

- (a) Install the hybrid inverter protector with the bolt.

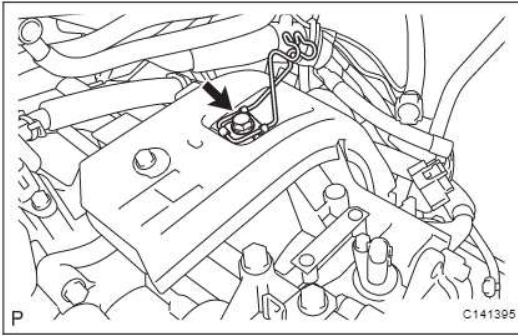
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

- (b) Install the No. 3 transmission control cable bracket.

Torque: 14 N*m (143 kgf*cm, 10 ft.*lbf)

HX

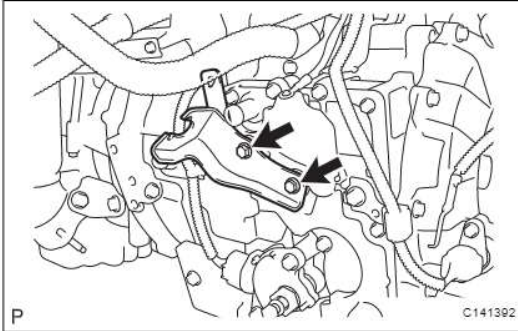
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8. INSTALL NO. 2 TRANSMISSION CONTROL CABLE BRACKET

- (a) Install the No. 2 transmission control cable bracket with the bolt.

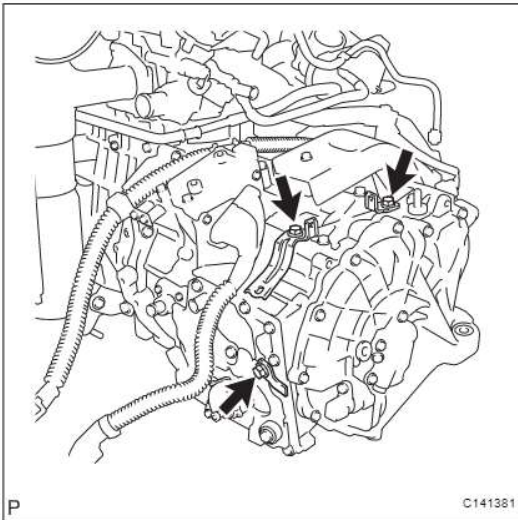
Torque: 12 N*m (120 kgf*cm, 9 ft.*lbf)



9. INSTALL NO. 1 TRANSMISSION CONTROL CABLE BRACKET

- (a) Install the No. 1 transmission control cable bracket with the 2 bolts.

Torque: 12 N*m (120 kgf*cm, 9 ft.*lbf)

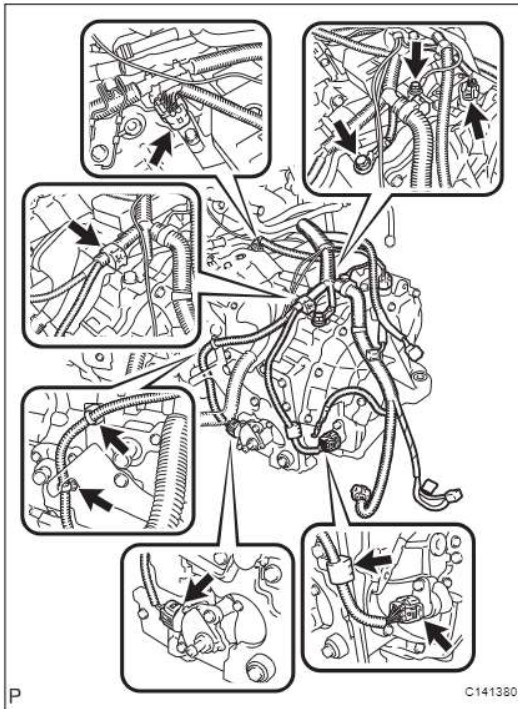


10. CONNECT ENGINE WIRE

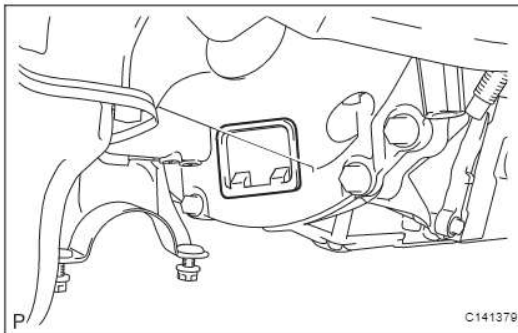
- (a) Install the 3 wire harness brackets with the 3 bolts.

Torque: 8.4 N*m (86 kgf*cm, 74 in.*lbf)

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P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID VEHICLE TRANSAXLE ASSEMBLY
HX-19

- (b) Connect the connectors.
 - (c) Connect the wire harnesses to the wire harness clamps.
 - (d) Install the ground wire with the bolt.
- Torque: 12 N*m (120 kgf*cm, 9 ft.*lbf)**



- 11. INSTALL FLYWHEEL HOUSING UNDER COVER**
 - (a) Install the flywheel housing under cover to the hybrid vehicle transaxle assembly.
- 12. INSTALL FRONT DRIVE SHAFT ASSEMBLY LH (See page [DS-17](#))**
- 13. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH (See page [DS-17](#))**
- 14. INSTALL FRONT FRAME ASSEMBLY (See page [EM-106](#))**
- 15. INSTALL DYNAMIC DAMPER (See page [EM-106](#))**
- 16. INSTALL ENGINE ASSEMBLY WITH TRANSAXLE**

HINT:

(See page [EM-107](#))

HX

ON-VEHICLE INSPECTION

1. CHECK SHIFT LOCK OPERATION
- (a) Move the shift lever to the P position.

(b) Turn the power switch off.

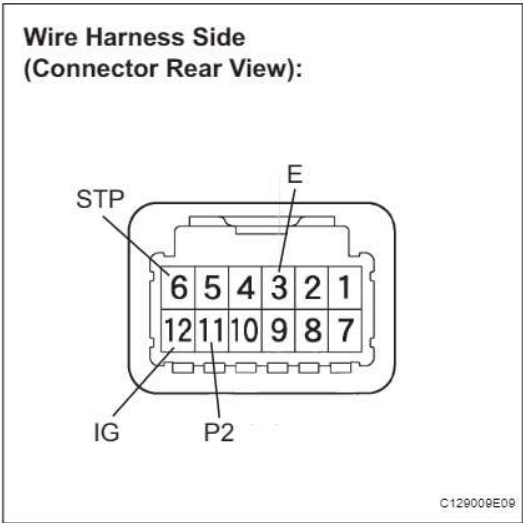
(c) Check that the shift lever cannot be adjusted to any position other than P.

(d) Turn the power switch on (READY), depress the brake pedal and check that the shift lever can be adjusted to the other positions.

(e) Check that the back-up light comes on and the reverse warning buzzer sounds when the shift lever is set in the R position, but the light and buzzer do not operate in other positions. If a failure is found, check the shift lever position sensor for continuity.
2. CHECK SHIFT LOCK RELEASE BUTTON OPERATION
- (a) Using a screwdriver, remove the shift lock release cover.

(b) When operating the shift lever with the shift lock release button pressed, check that the lever can be adjusted to any position other than P.
3. INSPECT SHIFT LOCK CONTROL UNIT ASSEMBLY
- (a) Measure the voltage according to the value(s) in the table below.

HINT:
Do not disconnect the shift lock control unit assembly connector.



Standard voltage

Terminal	Measuring Condition	Voltage (V)
12 (IG) - 3 (E)	Power switch on (IG)	10 to 14
12 (IG) - 3 (E)	Power switch off	Below 1
6 (STP) - 3 (E)	Brake pedal depressed	10 to 14
6 (STP) - 3 (E)	Brake pedal released	Below 1
11 (P2) - 3 (E)	Shift lever in P position	10 to 14
11 (P2) - 3 (E)	Shift lever in any position except P	Below 1.5

If the result is not done as specified, replace the shift lever assembly.

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P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER



- (b) Measure the resistance according to the value(s) in the table below.
HINT:
Do not disconnect the shift lock control unit assembly connector.

Standard resistance

Terminal	Measuring Condition	Specified Value
3 (E) - Body ground	Always	Below 1 Ω

If the result is not done as specified, replace the shift lever assembly.

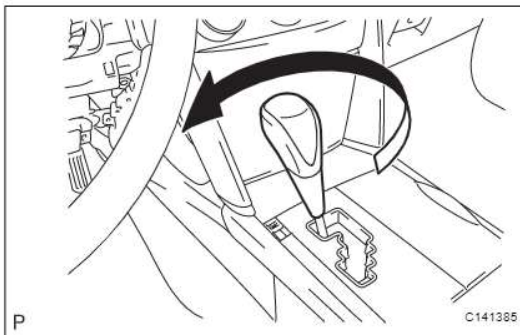
REMOVAL

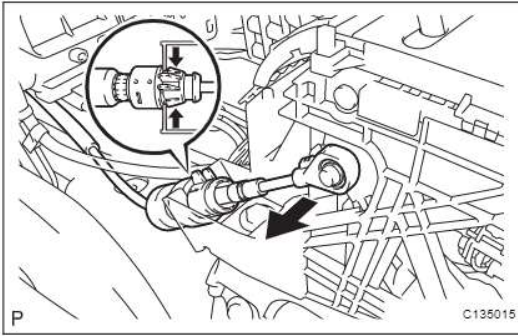
1. REMOVE CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

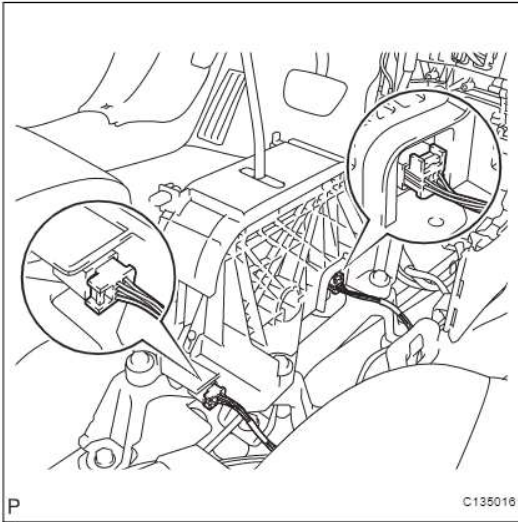
Wait for 90 seconds after disconnecting the cable to prevent airbag deployment (See page [RS-1](#)).

2. REMOVE FRONT DOOR SCUFF PLATE LH (See page [IR-13](#))
3. REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH (See page [IR-14](#))
4. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL LH (See page [IP-11](#))
5. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL (See page [IP-12](#))
6. REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY
 - (a) Turn the shift lever knob counterclockwise and remove the shift lever knob sub-assembly.
7. REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page [IP-14](#))
8. REMOVE NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page [IP-14](#))
9. REMOVE FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSEMBLY (See page [IP-15](#))
10. REMOVE UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (See page [IP-15](#))
11. REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY (See page [IP-16](#))
12. REMOVE CONSOLE BOX POCKET (See page [IP-17](#))
13. REMOVE CONSOLE BOX CARPET (See page [IP-17](#))
14. REMOVE CONSOLE BOX ASSEMBLY (See page [IP-17](#))
15. REMOVE NO. 2 CONSOLE BOX INSERT FRONT (See page [IP-18](#))
16. REMOVE FLOOR CARPET BRACKET LH (See page [AC-188](#))
17. REMOVE TRANSMISSION CONTROL CABLE ASSEMBLY
 - (a) Disconnect the end of the transmission control cable assembly from the shift lock control unit.

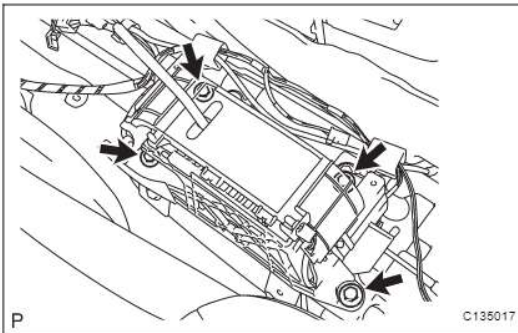


HX-24**P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER**

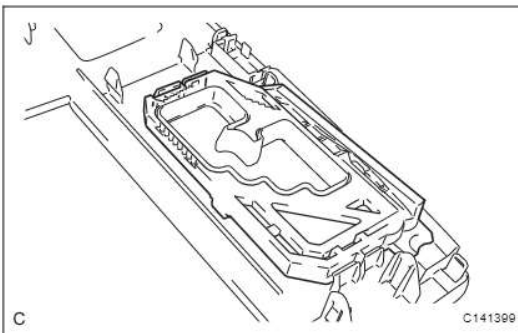
- (b) Disconnect the transmission control cable assembly from the shift lock control unit.

**18. REMOVE SHIFT LOCK CONTROL UNIT**

- (a) Disconnect the shift lock control ECU connector and transmission control switch wire connector.



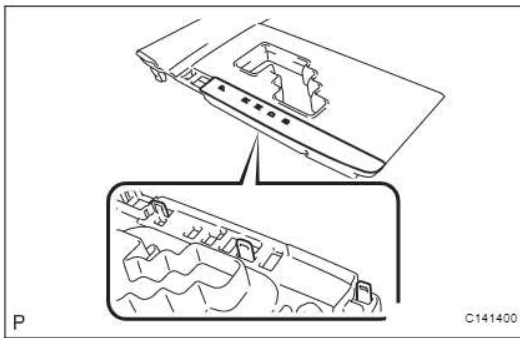
- (b) Remove the 4 bolts and shift lever.

HX**DISASSEMBLY****1. REMOVE POSITION INDICATOR LIGHT GUIDE**

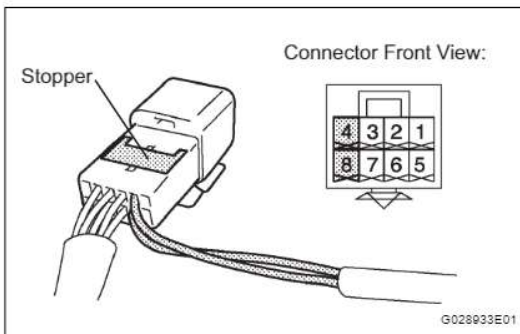
- (a) Remove the position indicator light guide.

2. REMOVE CONTROL POSITION INDICATOR PLATE

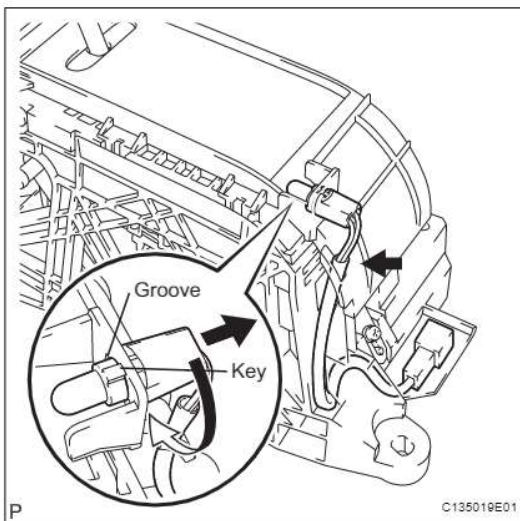
- (a) Remove the shift lock release button cover.

P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER**HX-25**

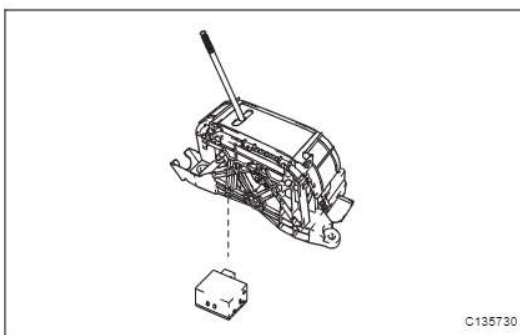
(b) Remove control position indicator plate.

**3. REMOVE INDICATOR LIGHT WIRE SUB-ASSEMBLY**

- (a) Using a screwdriver, release the stopper.
- (b) Using a screwdriver, disengage the locking lug of terminals (4) and (8), and pull the terminals out from the rear of the connector.



- (c) Release the indicator light wire from the clamp on the shift lock control unit.
- (d) Turn the indicator light guide counterclockwise.
- (e) Align the indicator light guide key with the groove on the shift lock control unit to remove the indicator light wire.

**4. REMOVE SHIFT LOCK CONTROL ECU**

- (a) Remove the shift lock control ECU from the shift lock control unit.

HX

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P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER

ADJUSTMENT

1. INSPECT SHIFT LEVER POSITION

- (a) Apply the parking brake.
- (b) Lock the wheels with chocks to secure the vehicle.
- (c) Put the vehicle into the READY-on state.
- (d) Move the shift lever to the D position and release the brake pedal.

NOTICE:

Be sure to apply the parking brake and lock the wheels with chocks to secure the vehicle.

- (e) Slowly move the shift lever to the N position and measure moving distance (A) of the shift lever from the original point to the gear activation point.

NOTICE:

Be sure to move the shift lever slowly.

- (f) Move the shift lever to the R position and release the brake pedal.

NOTICE:

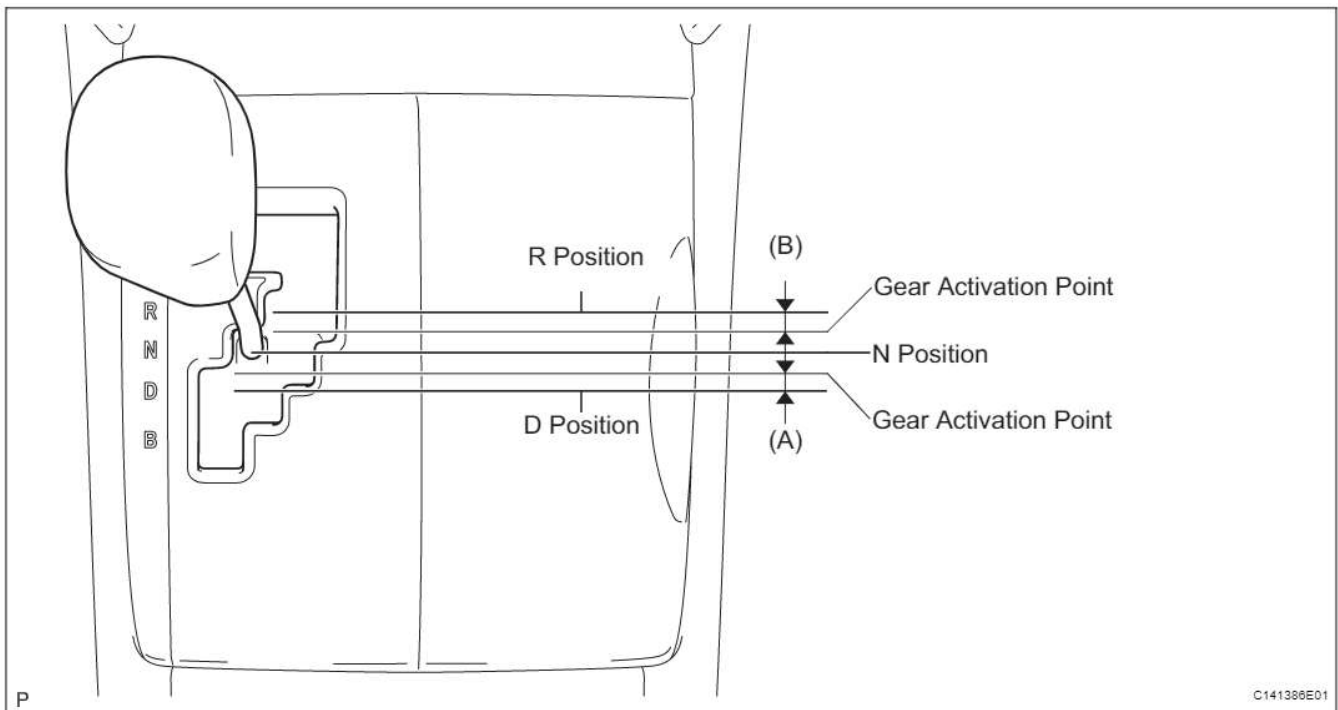
Be sure to apply the parking brake and lock the wheels with chocks to secure the vehicle.

- (g) Slowly move the shift lever to the N position and measure moving distance (B) of the shift lever from the original point to the gear activation point.

NOTICE:

Be sure to move the shift lever slowly.

- (h) Check that moving distances (A) and (B) shown in the illustration are almost the same.

**HINT:**

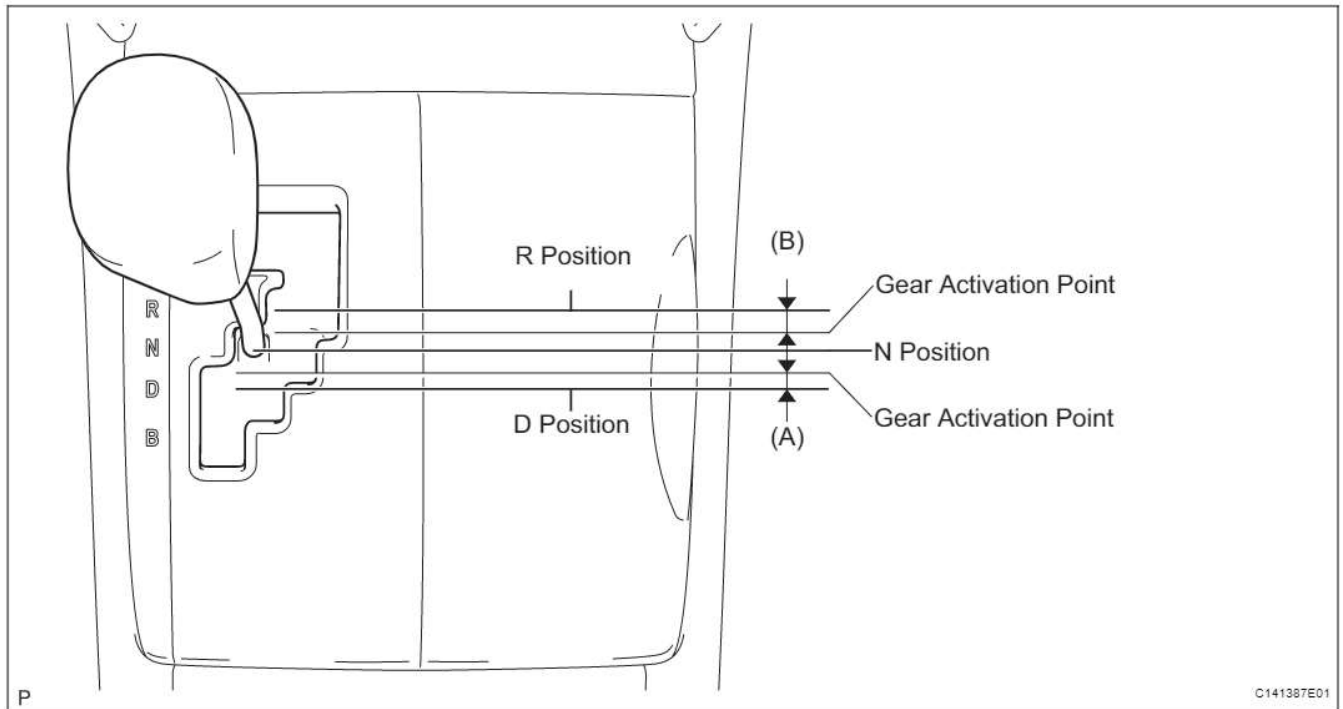
- If moving distances (A) and (B) are almost the same, adjustment of the shift lever position is not necessary.

P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER**HX-27**

- If moving distance (A) is shorter than (B), perform adjustment of the shift lever position [*1].
- If moving distance (B) is shorter than (A), perform adjustment of the shift lever position [*2].

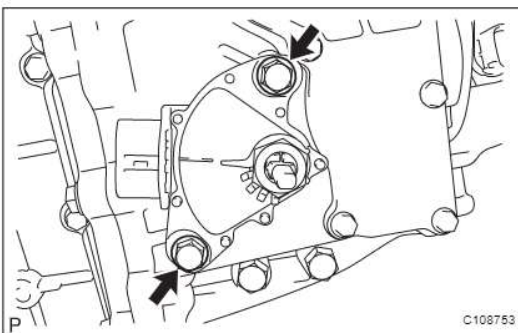
2. ADJUST SHIFT LEVER POSITION

(a) If moving distance (A) is shorter than (B) [*1]:

**HINT:**

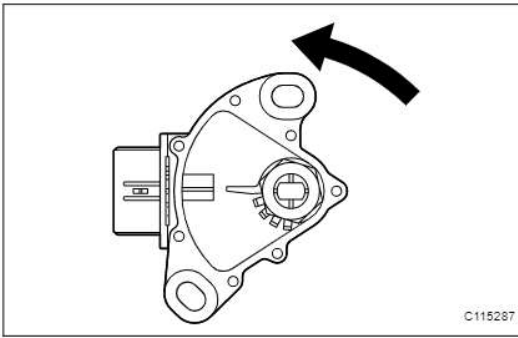
If the shift lever is moved from the R to the N position, the moving distance of the shift lever from the original point to the gear activation point becomes longer.

- (1) Move the shift lever to the N position.
- (2) Loosen the 2 bolts.

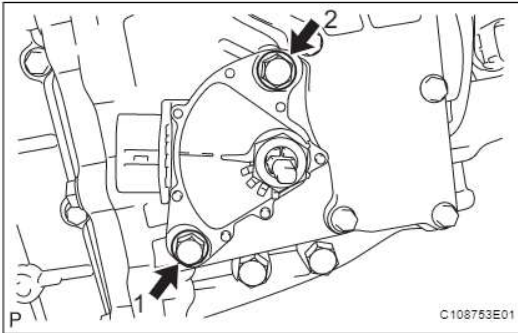
**HX**

HX-28

P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER



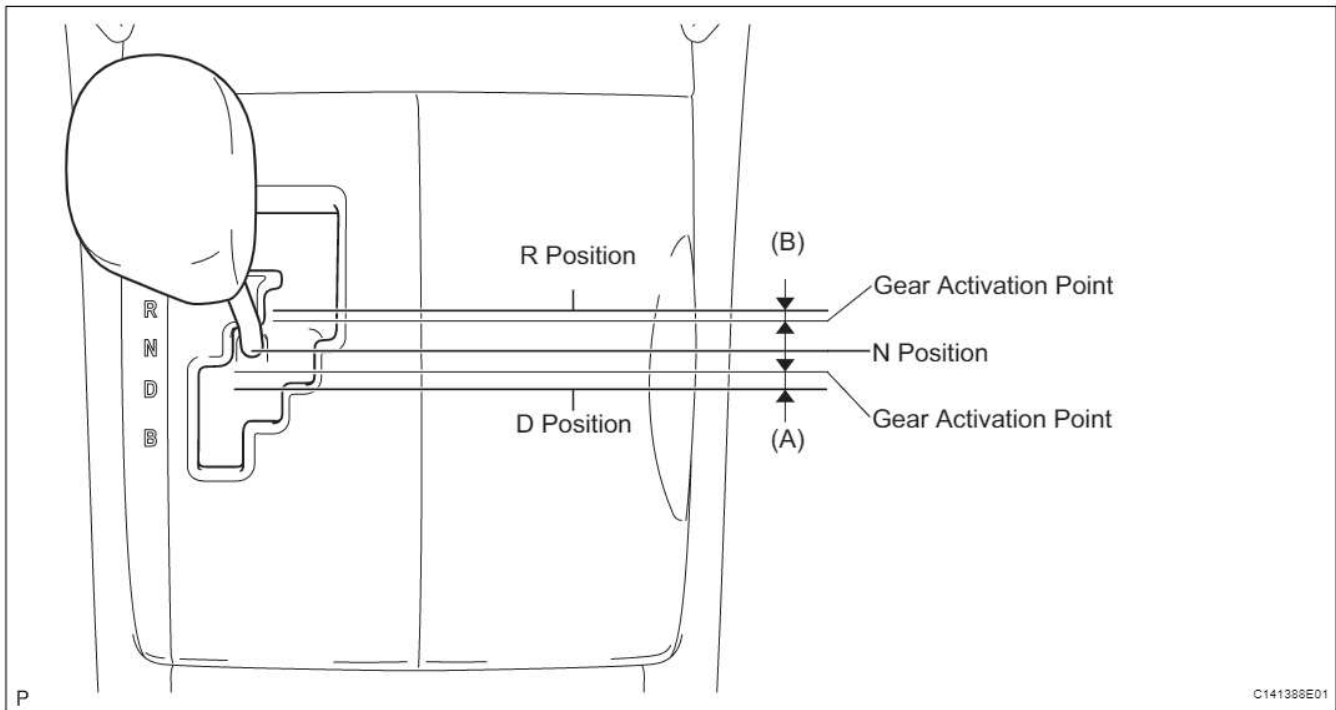
- (3) Slightly turn the shift lever position switch counterclockwise.



- (4) Tighten the 2 bolts in the order shown in the illustration.

Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)

- (5) Recheck the shift lever position.
(b) If moving distance (B) is shorter than (A) [*2]:



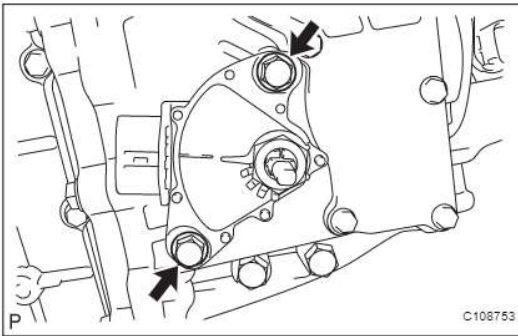
HINT:

If the shift lever is moved from the D to the N position, the moving distance of the shift lever from the original point to the gear activation point becomes longer.

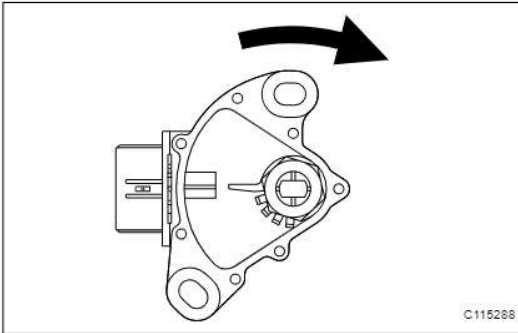
- (1) Move the shift lever to the N position.

P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER

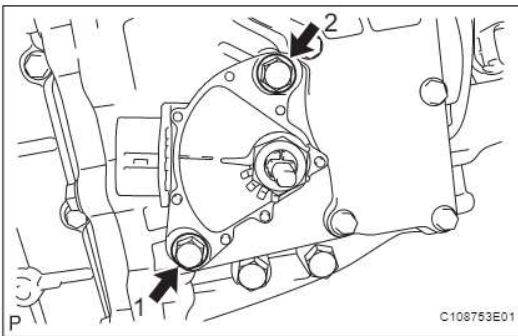
HX-29



(2) Loosen the 2 bolts.



(3) Slightly turn the shift lever position switch clockwise.



(4) Tighten the 2 bolts in the order shown in the illustration.

Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)

(5) Recheck the shift lever position.

3. INSPECT SHIFT LEVER OPERATION

(a) While moving the shift lever from the N position to each position, check that the lever moves smoothly and that the shift position indicator comes on properly according to the shift lever position.

(b) Turn the power switch on (READY) and check the following:

(1) When the shift lever is moved to the D position, the vehicle moves forward.

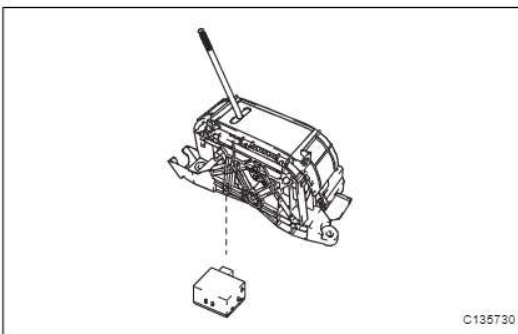
(2) When the shift lever is moved to the R position, the buzzer sounds and the vehicle moves in reverse.

NOTICE:

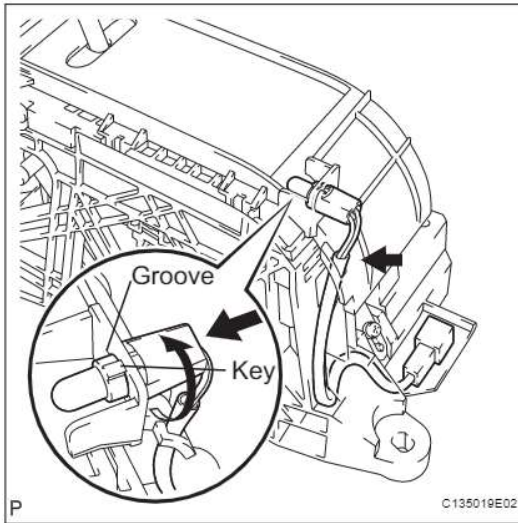
The vehicle should not move when the shift position indicator is off.

REASSEMBLY**1. INSTALL SHIFT LOCK CONTROL ECU**

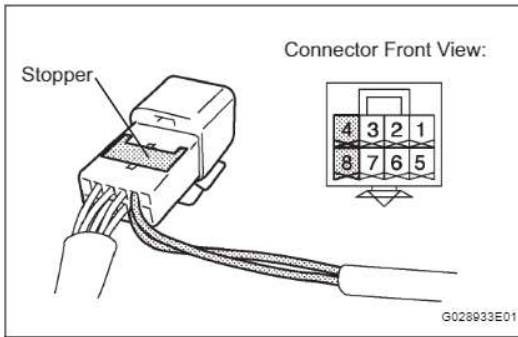
(a) Install the shift lock control ECU to the shift lever.



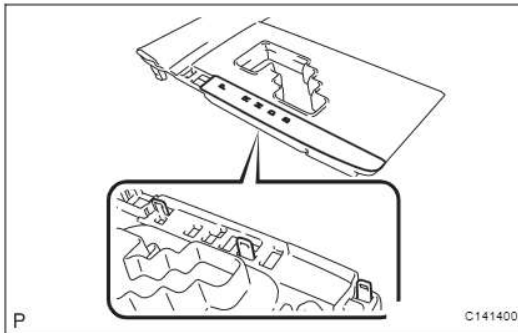
HX

HX-30**P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER****2. INSTALL INDICATOR LIGHT WIRE SUB-ASSEMBLY**

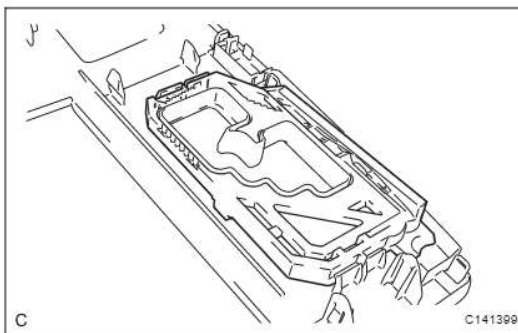
- Insert the indicator light wire into the shift lock control unit while aligning the groove on the unit with the indicator light guide key.
- Install the indicator light guide by turning it clockwise until it securely locks.
- Install the indicator light wire to the clamp on the shift lock control unit.



- Connect terminals (4) and (8) of the indicator light wire.
- Push the stopper.

**3. INSTALL CONTROL POSITION INDICATOR PLATE**

- Install the control position indicator plate.
- Install the shift lock release button cover.

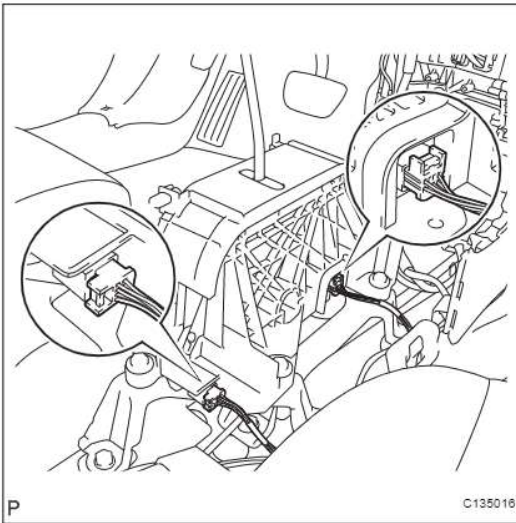
**4. INSTALL POSITION INDICATOR LIGHT GUIDE**

- Install the position indicator light guide.

HX

P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER

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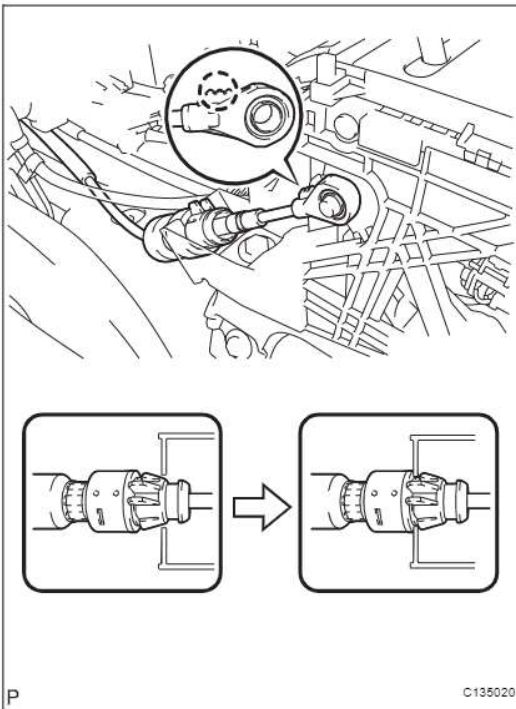


INSTALLATION

1. INSTALL SHIFT LOCK CONTROL UNIT

- (a) Connect the shift lock ECU connector and transmission control switch wire connector.
- (b) Install the shift lock control unit with the 4 bolts.

Torque: 12 N*m (122 kgf*cm, 9 ft.*lbf)



2. INSTALL TRANSMISSION CONTROL CABLE ASSEMBLY

- (a) Install the transmission control cable assembly as shown in the illustration.

HINT:

- Install the floor shift cable with the uneven surface facing up.
- Securely engage the claws of the floor shift cable.

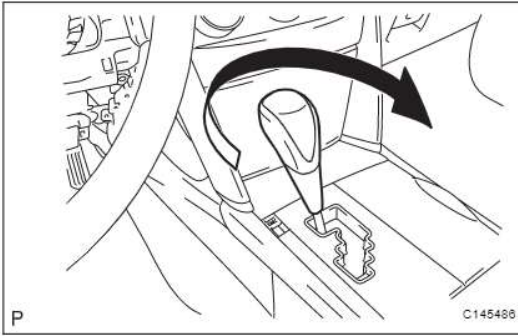
3. INSTALL FLOOR CARPET BRACKET LH

4. INSTALL NO. 2 CONSOLE BOX INSERT FRONT (See page [IP-30](#))5. INSTALL CONSOLE BOX ASSEMBLY (See page [IP-30](#))6. INSTALL CONSOLE BOX CARPET (See page [IP-30](#))7. INSTALL CONSOLE BOX POCKET (See page [IP-30](#))8. INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY (See page [IP-31](#))9. INSTALL UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (See page [IP-31](#))10. INSTALL FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSEMBLY (See page [IP-31](#))11. INSTALL NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page [IP-32](#))12. INSTALL NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page [IP-32](#))

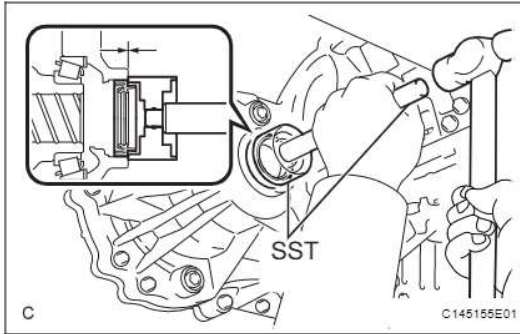
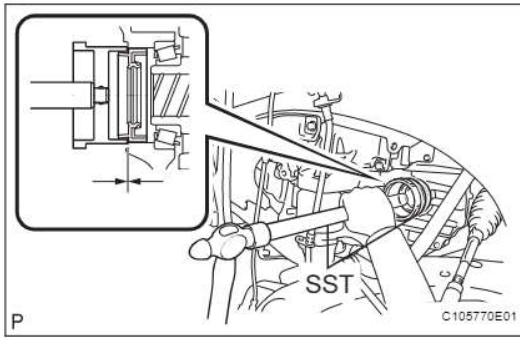
HX

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P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER



13. **INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY**
(a) Install the shift lever knob sub-assembly.
14. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL** (See page [IP-34](#))
15. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL LH** (See page [IP-35](#))
16. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See page [IR-41](#))
17. **INSTALL FRONT DOOR SCUFF PLATE LH** (See page [IR-41](#))
18. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)
19. **INSPECT SHIFT LEVER POSITION** (See page [HX-24](#))
20. **ADJUST SHIFT LEVER POSITION** (See page [HX-26](#))
21. **ADJUST TRANSMISSION CONTROL CABLE ASSEMBLY** (See page [HX-42](#))
22. **INSPECT SHIFT LEVER OPERATION** (See page [HX-28](#))
23. **PERFORM INITIALIZATION**
(a) Perform initialization (See page [IN-43](#)).
NOTICE:
Certain systems need to be initialized after reconnecting the cable to the negative (-) battery terminal.

HX-34**P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID TRANSAXLE OIL SEAL****INSTALLATION****1. REMOVE HYBRID VEHICLE TRANSAXLE OIL SEAL**

(a) Install the oil seal LH side.

- (1) Using SST and a hammer, tap in a new oil seal until its surface is flush with the case edge.

SST 09223-15020, 09950-70010 (09951-07150)

Oil seal installation depth:

-0.5 to 0.5 mm (-0.020 to 0.020 in.)

- (2) Coat the lip of the oil seal with MP grease.

(b) Install the oil seal RH side.

- (1) Using SST and a hammer, tap in a new oil seal until its surface is flush with the case edge.

SST 09950-70010 (09951-07150), 09710-30050

Oil seal installation depth:

-0.5 to 0.5 mm (-0.020 to 0.020 in.)

- (2) Coat the lip of the oil seal with MP grease.

2. INSTALL FRONT DRIVE SHAFT ASSEMBLY LH (See page DS-17)**3. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH (See page DS-17)****4. INSTALL FRONT AXLE ASSEMBLY (See page DS-18)****5. INSTALL FRONT SUSPENSION LOWER NO. 1 ARM (See page DS-18)****6. INSTALL TIE ROD SUB-ASSEMBLY (See page DS-18)****7. INSTALL FRONT SPEED SENSOR (See page DS-18)****8. INSTALL FRONT STABILIZER LINK ASSEMBLY (See page DS-19)****9. INSTALL FRONT AXLE HUB NUT (See page DS-19)****10. INSTALL FRONT WHEEL (See page DS-19)****11. ADD HYBRID TRANSAXLE FLUID (See page HX-2)****12. INSPECT HYBRID TRANSAXLE FLUID (See page HX-2)****13. ADJUST FRONT WHEEL ALIGNMENT**

HINT:

(See page SP-4).

14. CHECK ABS SPEED SENSOR SIGNAL

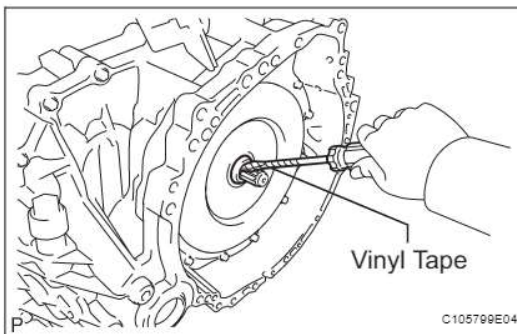
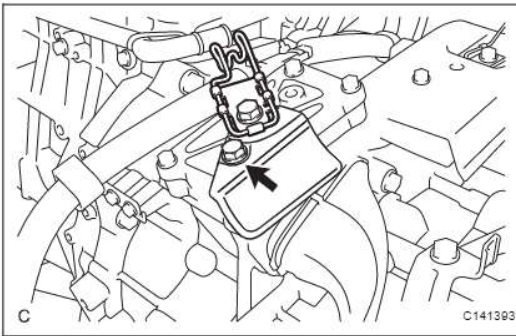
HINT:

(See page BC-35).

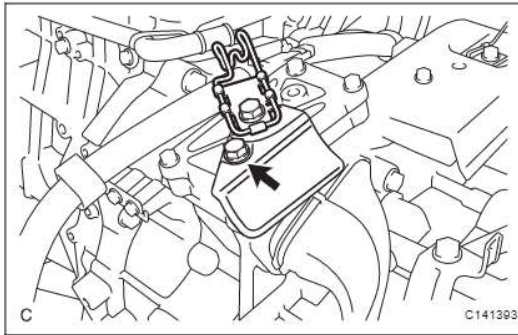
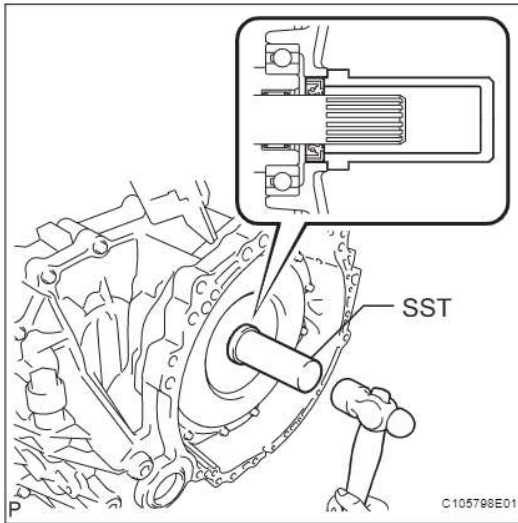
HX

REMOVAL

1. REMOVE ENGINE ASSEMBLY WITH TRANSAXLE
HINT:
(See page [EM-89](#)).
2. REMOVE DYNAMIC DAMPER (See page [EM-97](#))
3. REMOVE FRONT FRAME ASSEMBLY (See page [EM-97](#))
4. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH (See page [DS-6](#))
5. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH (See page [DS-7](#))
6. REMOVE FLYWHEEL HOUSING UNDER COVER (See page [HX-12](#))
7. SEPARATE ENGINE WIRE (See page [HX-12](#))
8. REMOVE NO. 2 TRANSMISSION CONTROL CABLE BRACKET (See page [HX-13](#))
9. REMOVE HV INVERTER PROTECTOR ASSEMBLY
Remove the bolt and HV inverter protector.
10. REMOVE AUTOMATIC TRANSMISSION CASE COVER (See page [HX-14](#))
11. REMOVE FRONT ENGINE MOUNTING BRACKET (See page [HX-15](#))
12. REMOVE HYBRID VEHICLE TRANSAXLE ASSEMBLY (See page [HX-15](#))
13. REMOVE INPUT SHAFT OIL SEAL
(a) Using a screwdriver with its tip taped, remove the oil seal.



HX

HX-38**P311 HYBRID TRANSMISSION / TRANSAXLE – INPUT SHAFT OIL SEAL****INSTALLATION**

1. **INSTALL INPUT SHAFT OIL SEAL**
 - (a) Using SST and a hammer, drive in a new oil seal.
SST 09388-40010
2. **INSTALL HYBRID VEHICLE TRANSAXLE ASSEMBLY** (See page [HX-15](#))
3. **INSTALL FRONT ENGINE MOUNTING BRACKET** (See page [HX-16](#))
4. **INSTALL AUTOMATIC TRANSMISSION CASE COVER** (See page [HX-16](#))
5. **INSTALL HV INVERTER PROTECTOR ASSEMBLY**
 - (a) Install the HV inverter protector with the bolt.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)
6. **INSTALL NO. 2 TRANSMISSION CONTROL CABLE BRACKET** (See page [HX-17](#))
7. **CONNECT ENGINE WIRE** (See page [HX-18](#))
8. **INSTALL FLYWHEEL HOUSING UNDER COVER** (See page [HX-18](#))
9. **INSTALL FRONT DRIVE SHAFT ASSEMBLY LH** (See page [DS-17](#))
10. **INSTALL FRONT DRIVE SHAFT ASSEMBLY RH** (See page [DS-17](#))
11. **INSTALL FRONT FRAME ASSEMBLY** (See page [EM-106](#))
12. **INSTALL DYNAMIC DAMPER** (See page [EM-106](#))
13. **INSTALL ENGINE ASSEMBLY WITH TRANSAXLE**
HINT:
(See page [EM-102](#)).

HX

HX-42 P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY

REMOVAL

1. REMOVE AIR CONDITIONING UNIT

HINT:

(See page [AC-185](#)).

2. REMOVE ENGINE UNDER COVER RH

3. REMOVE ENGINE UNDER COVER LH

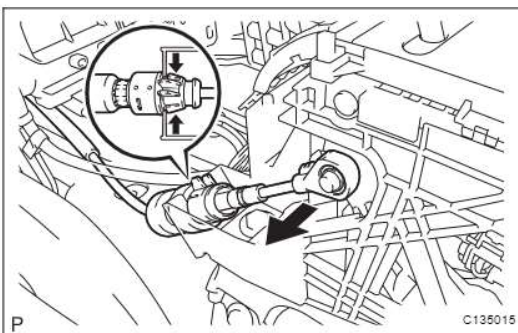
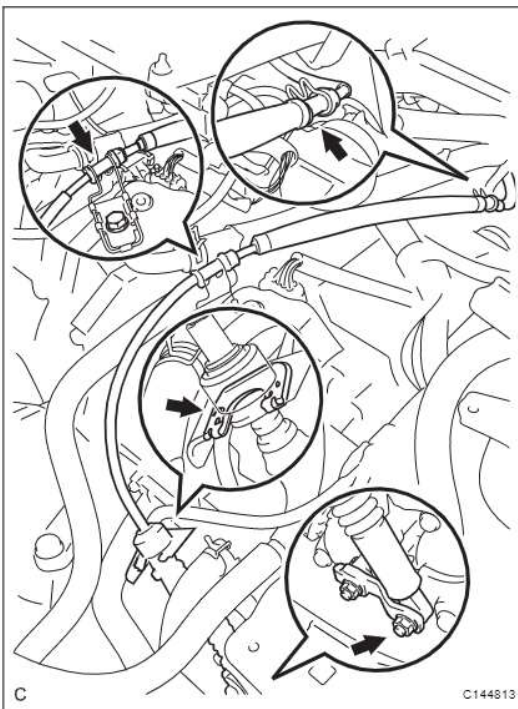
4. REMOVE AIR CLEANER INLET ASSEMBLY (See page [EM-90](#))

5. REMOVE AIR CLEANER CAP SUB-ASSEMBLY (See page [ES-395](#))

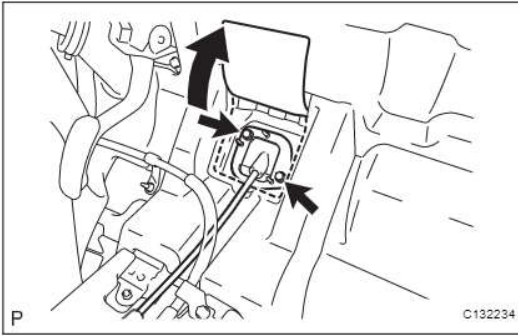
6. REMOVE AIR CLEANER CASE SUB-ASSEMBLY (See page [EM-90](#))

7. SEPARATE TRANSMISSION CONTROL CABLE ASSEMBLY

- (a) Remove the nut from the control shaft lever.
- (b) Disconnect the transmission control cable assembly from the control shaft lever.
- (c) Remove the clip and disconnect the transmission control cable assembly from the No. 1 control cable bracket.
- (d) Disconnect the transmission control cable assembly from the No. 2 transmission control cable bracket and No. 3 transmission control cable bracket.



- (e) Disconnect the transmission control cable assembly from the transmission floor shift assembly while pushing the 2 claws of the floor shift cable.

P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY**HX-43****8. REMOVE TRANSMISSION CONTROL CABLE ASSEMBLY**

- (a) Turn back the carpet.
- (b) Remove the 2 bolts and disconnect the shift cable grommet retainer.
- (c) Remove the shift cable grommet retainer.
- (d) Pull out the transmission control cable assembly from the body.

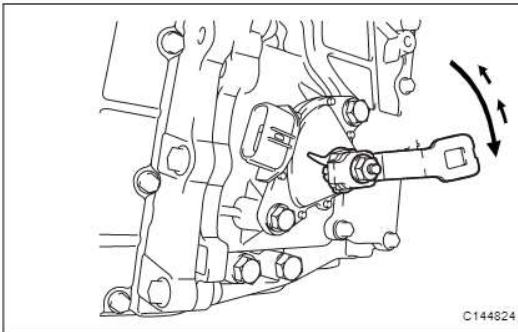
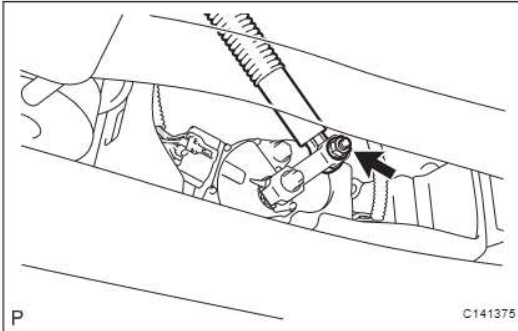
HX

HX-44 P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY

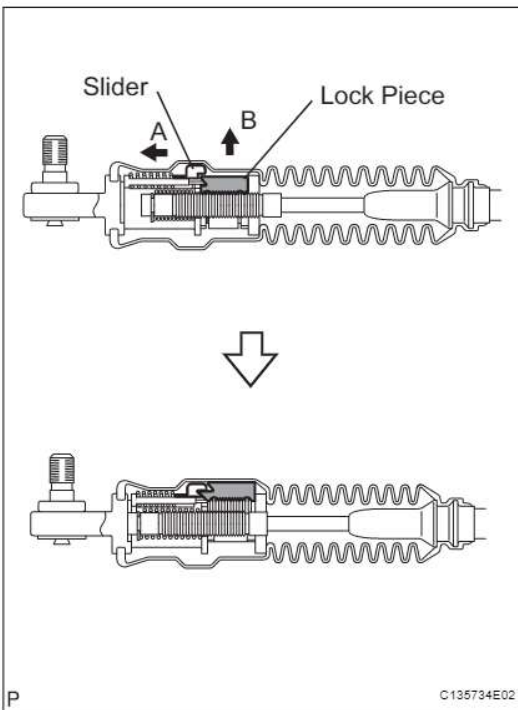
ADJUSTMENT

1. ADJUST TRANSMISSION CONTROL CABLE ASSEMBLY

- Move the shift lever to the N position.
- Remove the nut from the control shaft lever.
- Disconnect the transmission control cable assembly from the control shaft lever.



- Push the control shaft fully downward.
- Return the control shaft lever 2 notches to the N position.



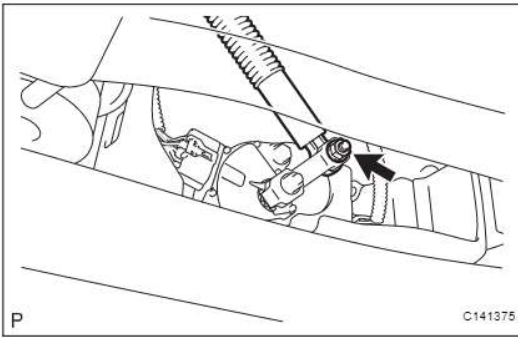
- Move the slider in the direction indicated by arrow A and pull up the lock piece in the direction indicated by arrow B.

NOTICE:

Do not damage the boot.

P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY

HX-45

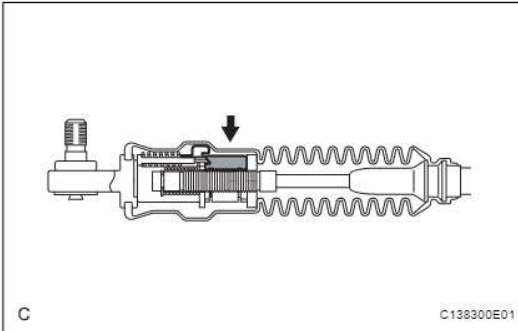


- (g) Install the transmission control cable to the control shaft lever with the nut.

Torque: 15 N*m (150 kgf*cm, 11 ft.*lbf)

NOTICE:

- If the control cable end is excessively pushed up, the shift lever cannot be adjusted.
- When tightening the nut, confirm that the control cable is properly stretched.



- (h) Push in the lock piece.

NOTICE:

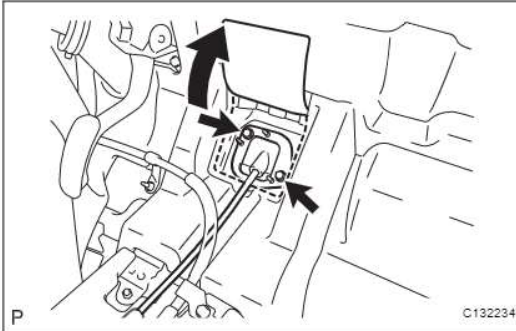
- Before pushing in the lock piece, make sure that the shift lever and control shaft lever are in the N position.
 - Firmly push in the lock piece until the slider lock is engaged.
- (i) Start the engine and make sure that the vehicle moves forward when moving the lever from the N to the D position and moves rearward when moving it to the R position.
If it becomes hard to move the shift lever, readjust the shift lever position.

HX

HX-46**P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY****INSTALLATION****1. INSTALL NO. 2 SHIFT CABLE GROMMET RETAINER**

- Pass the transmission control cable assembly from the cabin to the engine compartment.
- Install the shift cable grommet retainer to the transmission control cable assembly.
- Install the shift cable grommet retainer with the 2 bolts.

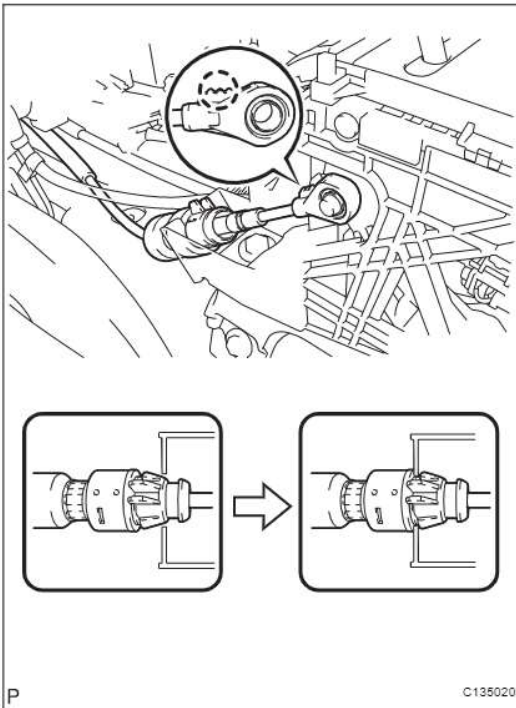
Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)

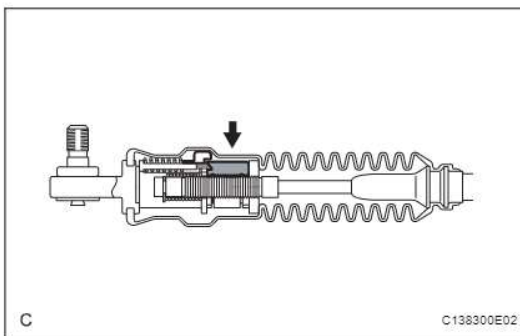
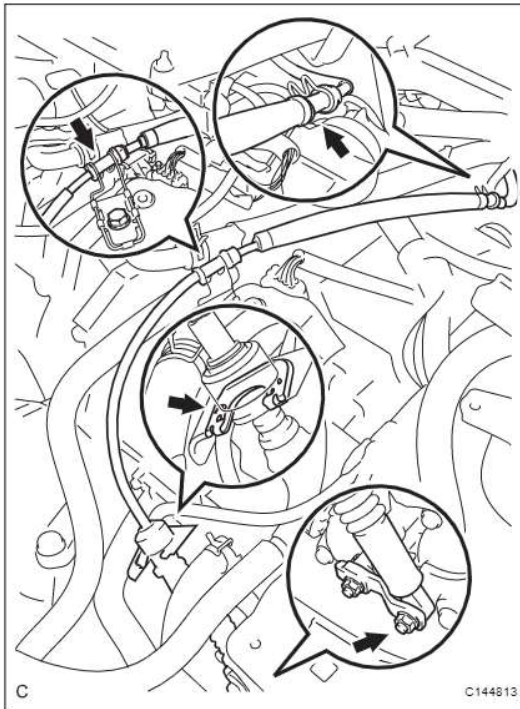
**2. INSTALL TRANSMISSION CONTROL CABLE ASSEMBLY**

- Install the transmission control cable assembly as shown in the illustration.

HINT:

- Install the floor shift cable with the uneven surface facing up.
- Securely engage the claws of the floor shift cable.

**HX**

P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY
HX-47

- (b) Connect the transmission control cable assembly to the No. 2 transmission control cable bracket and No. 3 transmission control cable bracket.
- (c) Connect the transmission control cable assembly to the transmission control cable bracket No. 1 with a new clip.
- (d) Install the transmission control cable to the control shaft lever with the nut.

Torque: 15 N*m (150 kgf*cm, 11 ft.*lbf)

- (e) Push in the lock piece of the transmission control cable.

NOTICE:

- Before pushing in the lock piece, make sure that the shift lever and control shaft lever are in the N position.
- Firmly push in the lock piece until the slider lock is engaged.

HINT:

After pushing in the lock piece, make sure that the boot is not deformed.

3. **INSTALL AIR CLEANER CASE SUB-ASSEMBLY** (See page [EM-113](#))
4. **INSTALL AIR CLEANER CAP SUB-ASSEMBLY** (See page [ES-398](#))
5. **INSTALL AIR CLEANER INLET ASSEMBLY** (See page [EM-113](#))
6. **INSTALL ENGINE UNDER COVER LH**
7. **INSTALL ENGINE UNDER COVER RH**
8. **INSTALL AIR CONDITIONING UNIT**
HINT:
 (See page [AC-200](#)).
9. **INSPECT SHIFT LEVER POSITION** (See page [HX-24](#))
10. **ADJUST SHIFT LEVER POSITION** (See page [HX-26](#))
11. **INSPECT SHIFT LEVER OPERATION** (See page [HX-28](#))

HX

HX-48 P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY

12. REMOVE PERFORM INITIALIZATION

- (a) Perform initialization (See page [IN-43](#)).

NOTICE:

Certain systems need to be initialized after reconnecting the cable to the negative (-) battery terminal.

HX

HYBRID TRANSAXLE SYSTEM

ON-VEHICLE INSPECTION

1. INSPECT FLUID PRESSURE OF OIL PUMP

NOTICE:

Do the test at normal operating fluid temperature 50 to 80°C (122 to 176°F).

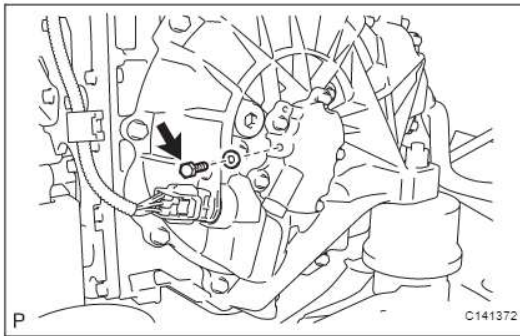
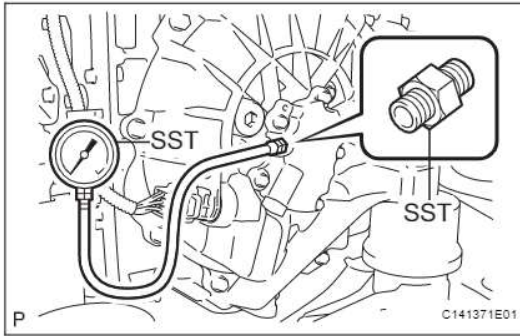
- (a) Lift up the vehicle.
- (b) Remove the fluid pump cover plug and install SST.
- (c) Set the vehicle to inspection mode. (See page [IN-5](#))
- (d) Measure the fluid pressure.

Fluid pressure:

9.8 kPa (0.1 kgf/cm², 1.4 psi) or more

NOTICE:

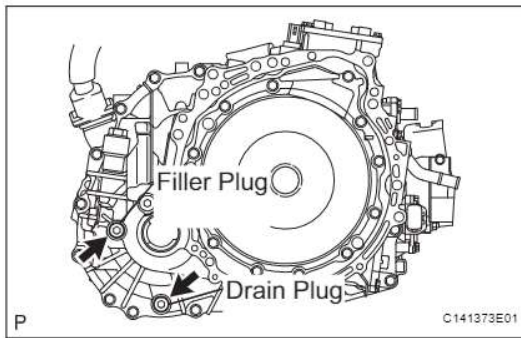
Be sure to cancel the inspection mode immediately after the fluid pressure check is completed. (See page [IN-5](#))



- (e) Install a new O-ring and fluid pump cover plug.
Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

HX-2

P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID TRANSAXLE FLUID



HYBRID TRANSAXLE FLUID

REPLACEMENT

1. DRAIN HYBRID TRANSAXLE FLUID

- Using a socket hexagon wrench 10 mm, remove the filler plug and gasket.
- Using a socket hexagon wrench 10 mm, remove the drain plug and gasket.
- Using a socket hexagon wrench 10 mm, install the drain plug, and a new gasket.

Torque: 39 N*m (398 kgf*cm, 29 ft.*lbf)

2. ADD HYBRID TRANSAXLE FLUID

- Add fluid.

HINT:

Fluid capacity: 3.8 liters (4.0 US qts, 3.3 Imp. qts.)

- Check that the fluid surface is within 5 mm (0.20 in.) from the lowest position of the inner surface of the differential filler plug opening.

NOTICE:

- Stop the vehicle on a flat road.
- Recheck the transaxle fluid level after driving when exchanging fluid.
- Insufficient or excessive amounts of transaxle fluid may be the cause of some trouble.

- Check the oil level.
- Using a socket hexagon wrench 10 mm, install the filler plug, and a new gasket.

Torque: 39 N*m (398 kgf*cm, 29 ft.*lbf)

3. INSPECT HYBRID TRANSAXLE FLUID

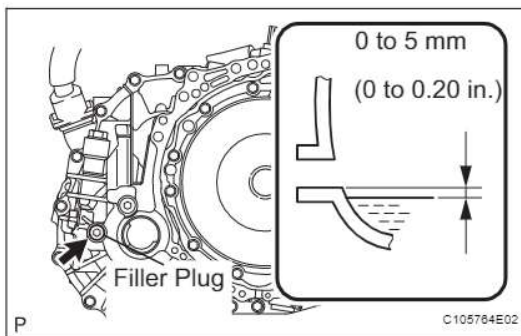
- Using a socket hexagon wrench 10 mm, remove the filler plug and gasket.
- Check that the fluid surface is within 5 mm (0.20 in.) from the lowest position of the inner surface of the differential filler plug opening.

NOTICE:

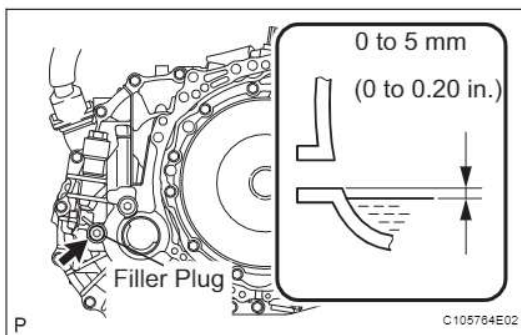
- Stop the vehicle on a flat road.
- Recheck the transaxle fluid level after driving when exchanging fluid.
- Insufficient or excessive amounts of transaxle fluid may be the cause of some trouble.

- Check for leaks if the quantity of fluid is low.
- Using a socket hexagon wrench 10 mm, install the filler plug, and a new gasket.

Torque: 39 N*m (398 kgf*cm, 29 ft.*lbf)

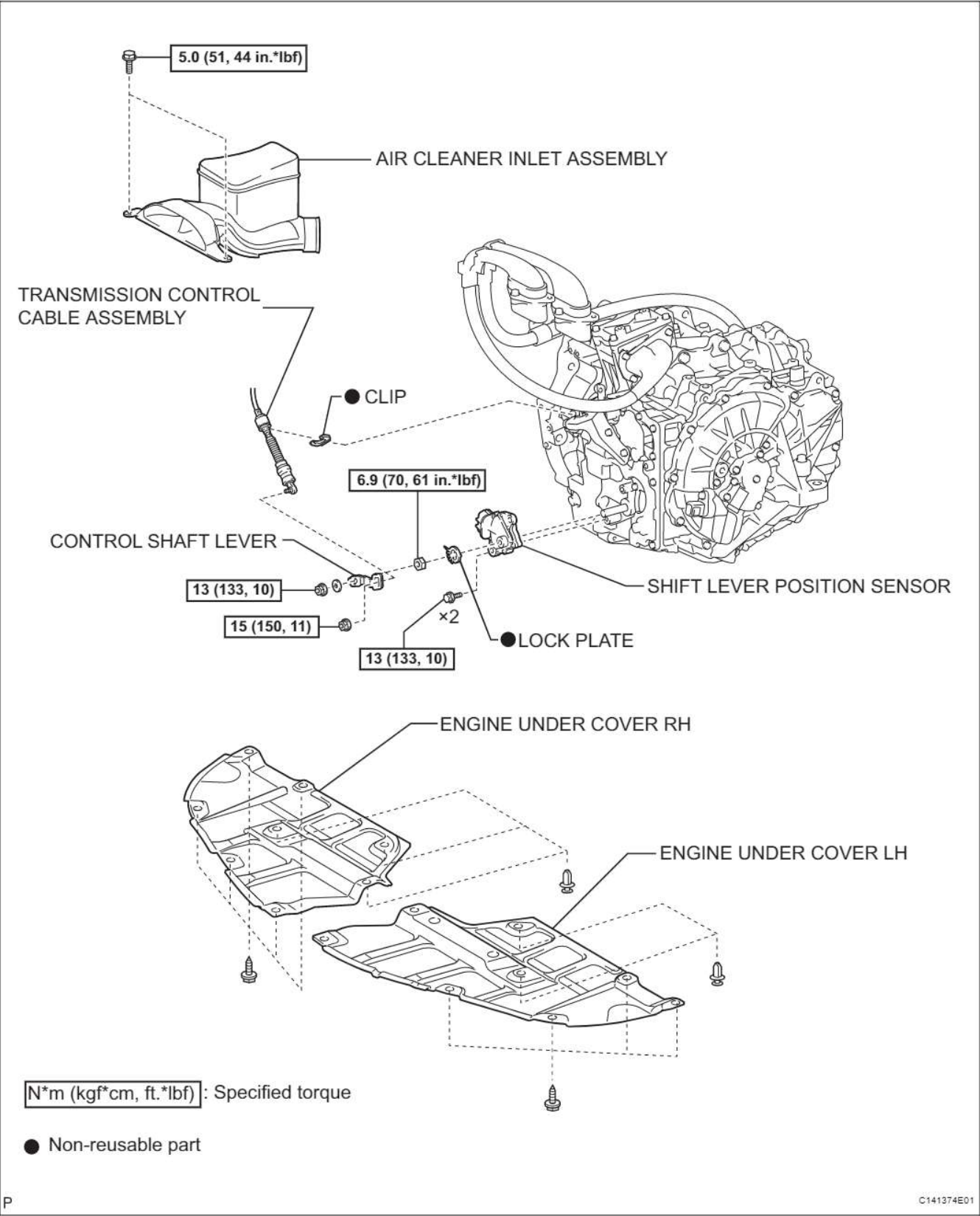


HX



SHIFT LEVER POSITION SENSOR

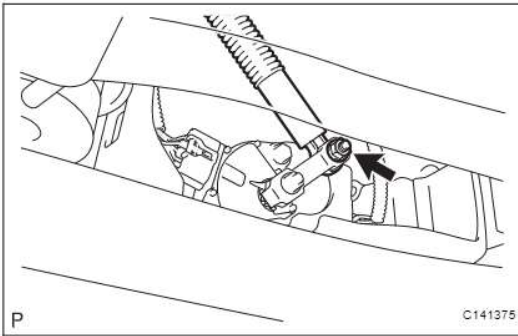
COMPONENTS



HX-4**P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER POSITION SENSOR****REMOVAL**

1. **DISCONNECT CABLE FROM BATTERY NEGATIVE TERMINAL**
2. **REMOVE ENGINE UNDER COVER RH**
3. **REMOVE ENGINE UNDER COVER LH**
4. **REMOVE AIR CLEANER INLET ASSEMBLY (See page EM-90)**
5. **SEPARATE TRANSMISSION CONTROL CABLE ASSEMBLY**

(a) Remove the nut from the control shaft lever.

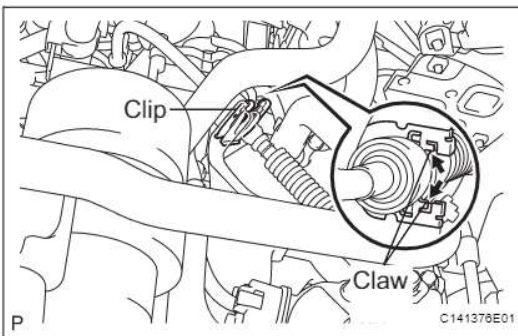


(b) Using a screwdriver, disengage the 2 claws, and disconnect the transmission control cable assembly with the clip from the control cable bracket.

HINT:

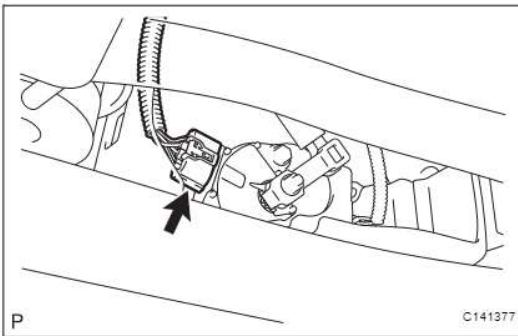
Tape the screwdriver tip before use.

(c) Remove the clip.

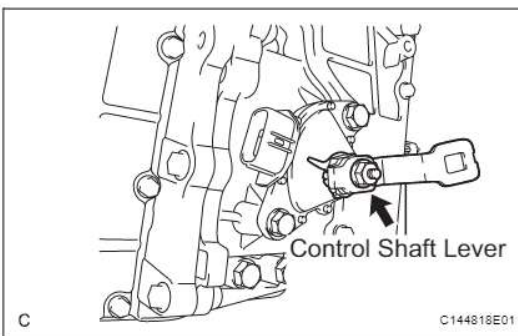


6. **REMOVE SHIFT LEVER POSITION SENSOR**

(a) Disconnect the shift lever position sensor connector.



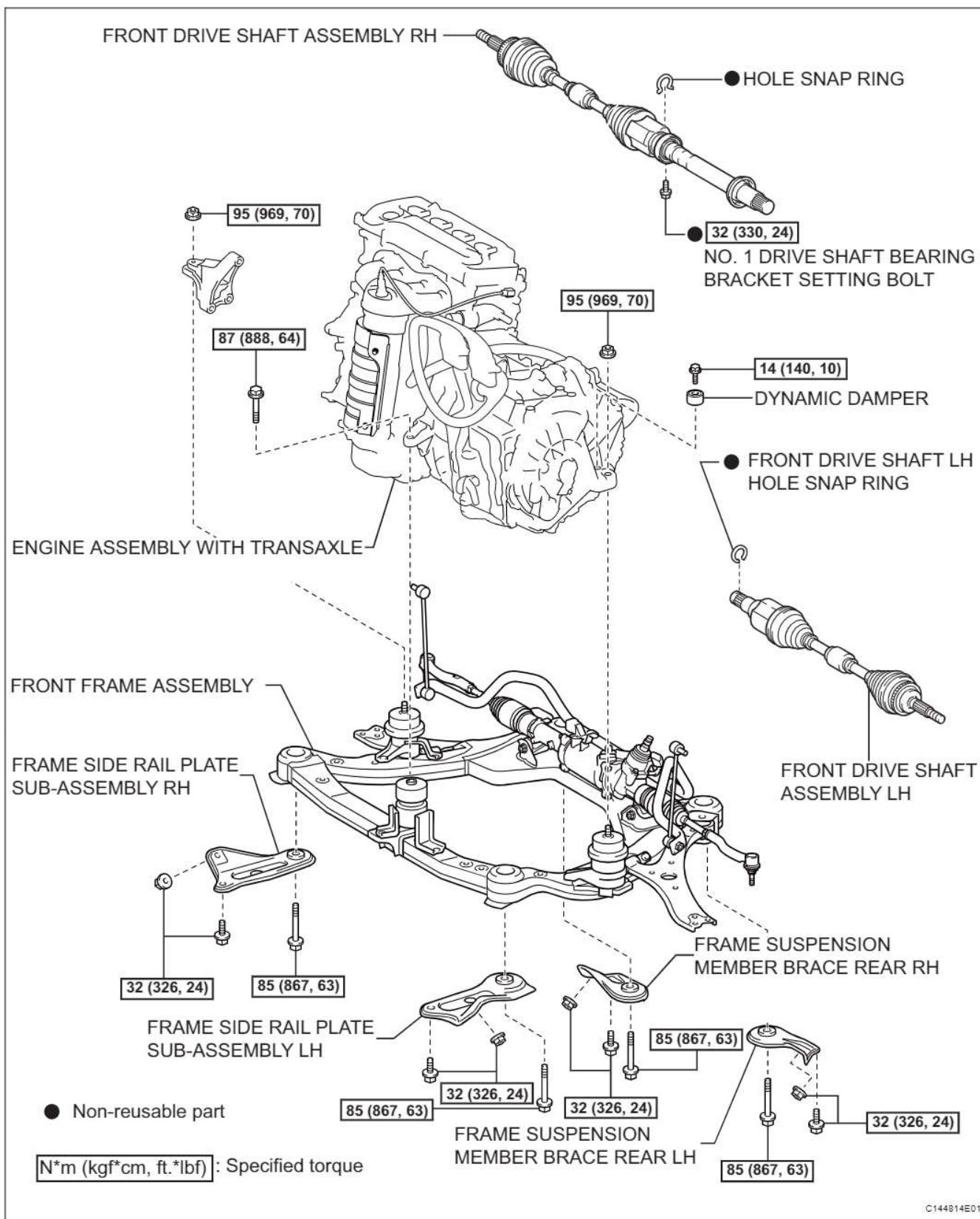
(b) Remove the nut, washer, and control shaft lever.

**HX**

HX-10 P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID VEHICLE TRANSAXLE ASSEMBLY

HYBRID VEHICLE TRANSAXLE ASSEMBLY

COMPONENTS



HX-11

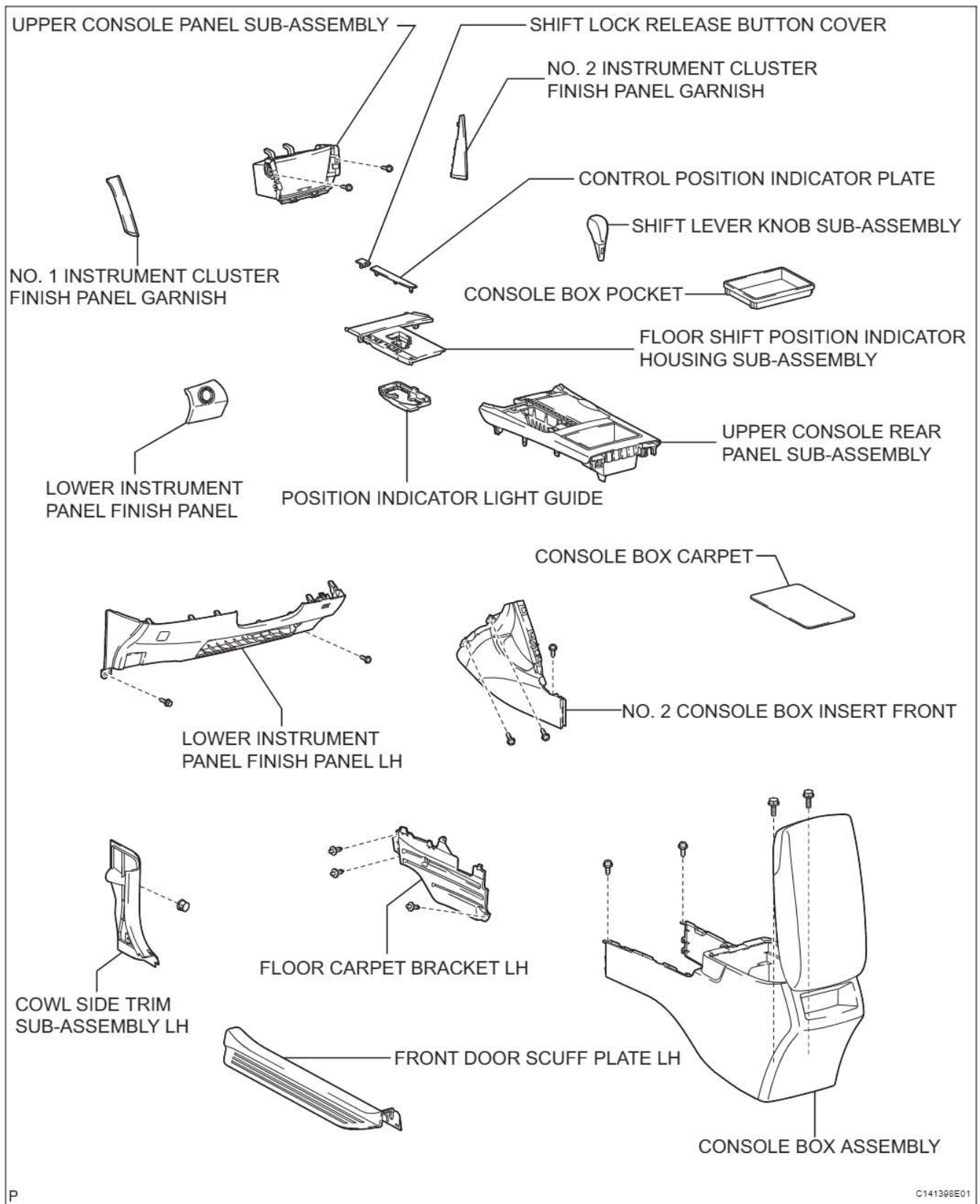


P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER

HX-19

SHIFT LEVER

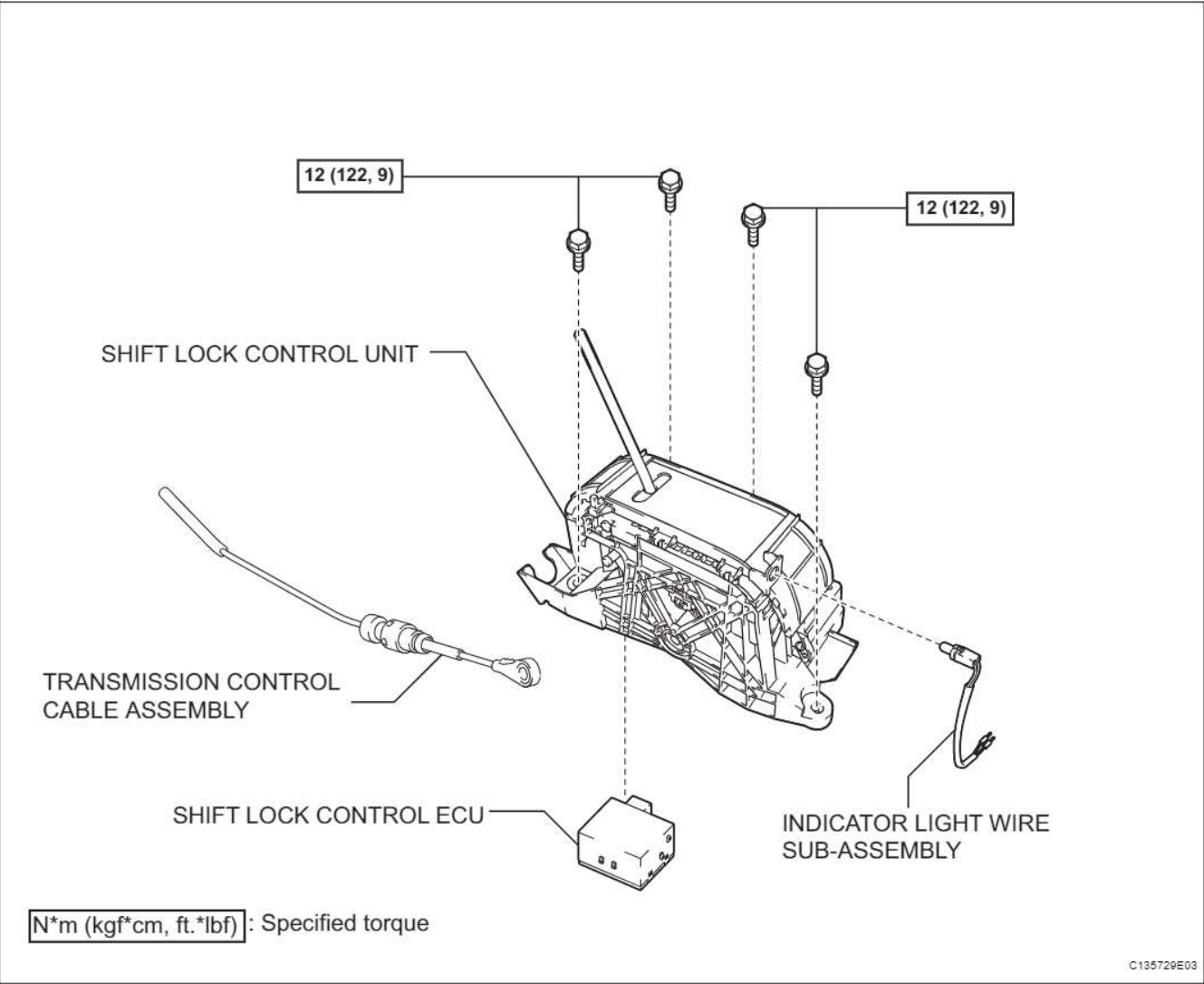
COMPONENTS



HX

HX-20

P311 HYBRID TRANSMISSION / TRANSAXLE – SHIFT LEVER

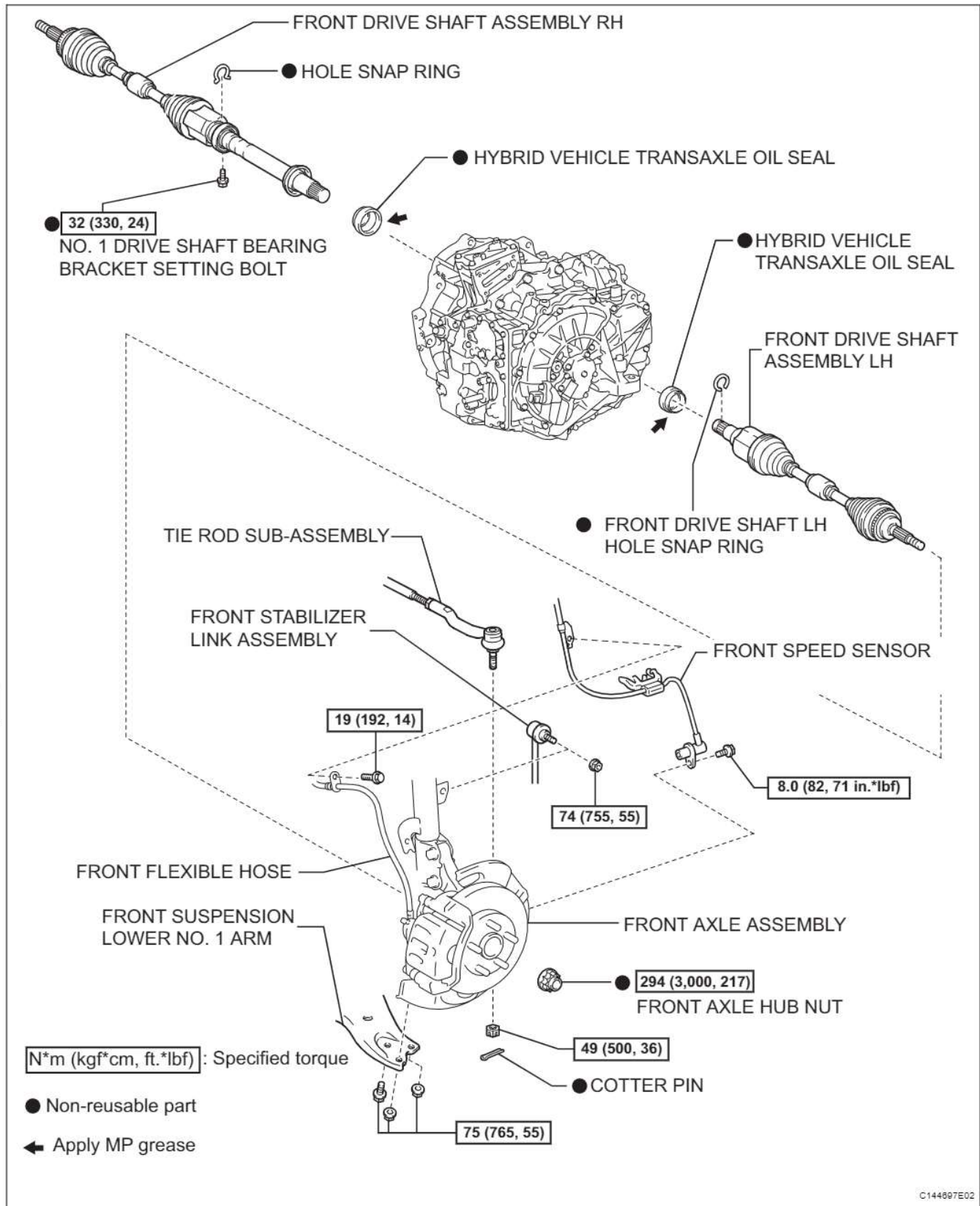


HX-32

P311 HYBRID TRANSMISSION / TRANSAXLE – HYBRID TRANSAXLE OIL SEAL

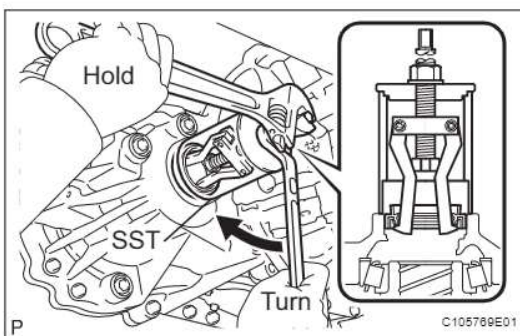
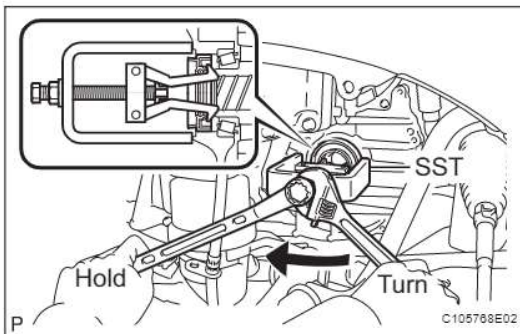
HYBRID TRANSAXLE OIL SEAL

COMPONENTS



REMOVAL

1. DRAIN HYBRID TRANSAXLE FLUID (See page [HX-2](#))
2. REMOVE FRONT WHEEL
3. REMOVE FRONT AXLE HUB NUT (See page [DS-5](#))
4. SEPARATE FRONT STABILIZER LINK ASSEMBLY (See page [DS-5](#))
5. SEPARATE FRONT SPEED SENSOR (See page [DS-5](#))
6. SEPARATE TIE ROD SUB-ASSEMBLY (See page [DS-6](#))
7. SEPARATE FRONT SUSPENSION LOWER NO. 1 ARM (See page [DS-6](#))
8. SEPARATE FRONT AXLE ASSEMBLY (See page [DS-6](#))
9. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH (See page [DS-6](#))
10. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH (See page [DS-7](#))
11. SECURE FRONT AXLE ASSEMBLY (See page [DS-7](#))
12. REMOVE HYBRID VEHICLE TRANSAXLE OIL SEAL
 - (a) Remove the oil seal LH side.
 - (1) Using SST, remove the oil seal.
SST 09514-35011



- (b) Remove the oil seal RH side.
 - (1) Using SST, remove the oil seal.
SST 09612-30012

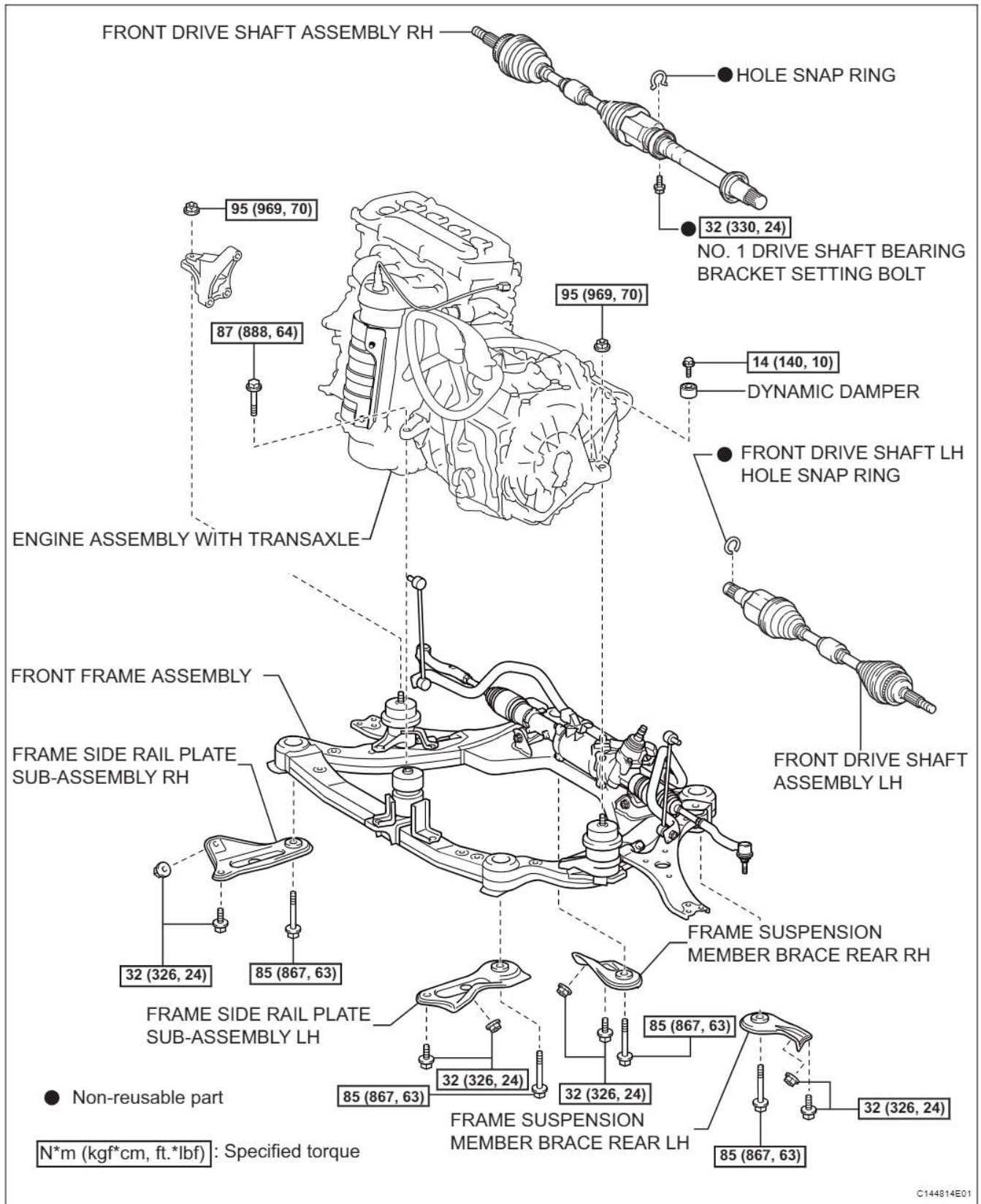
HX

P311 HYBRID TRANSMISSION / TRANSAXLE – INPUT SHAFT OIL SEAL

HX-35

INPUT SHAFT OIL SEAL

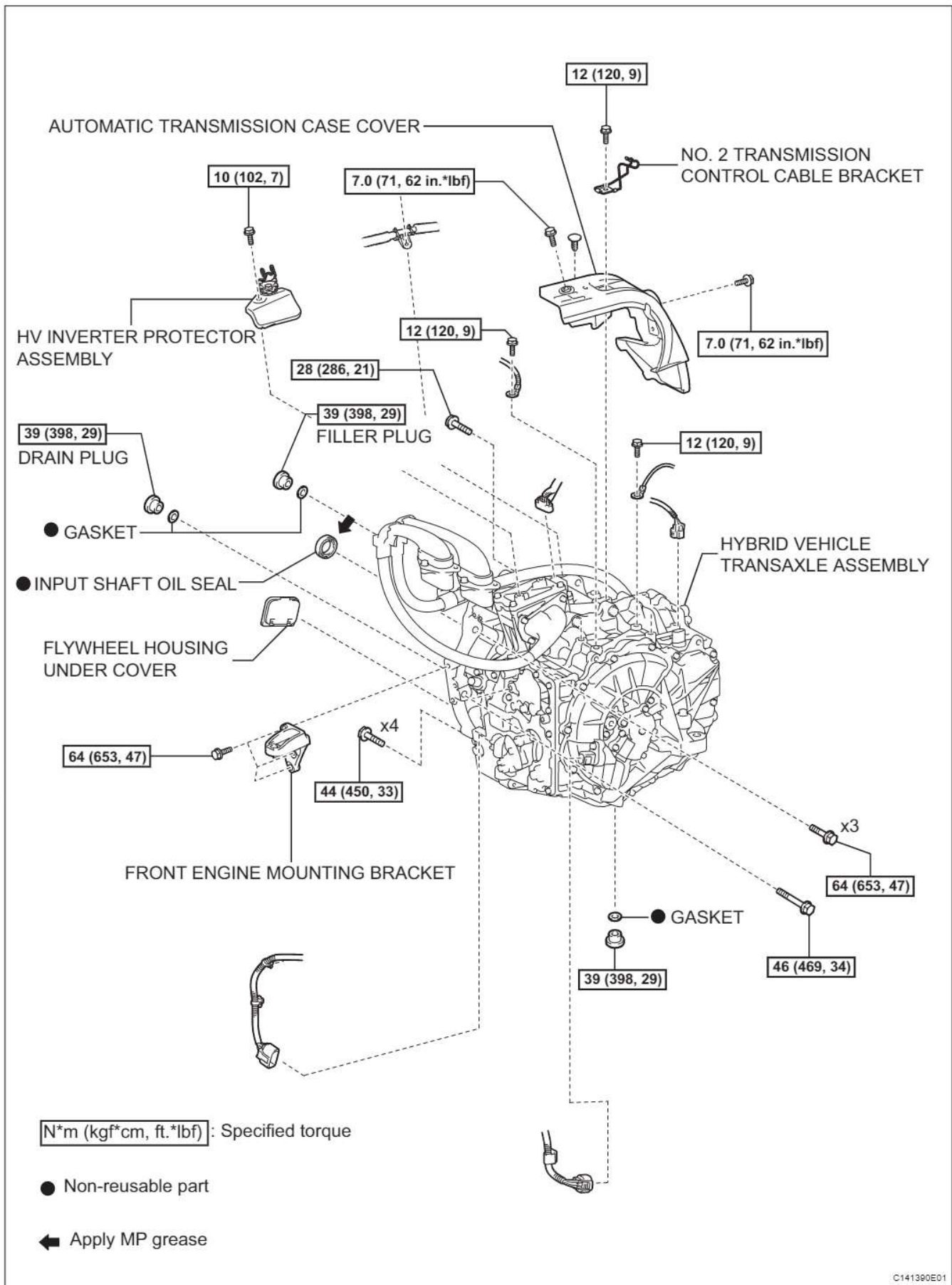
COMPONENTS



HX

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P311 HYBRID TRANSMISSION / TRANSAXLE – INPUT SHAFT OIL SEAL



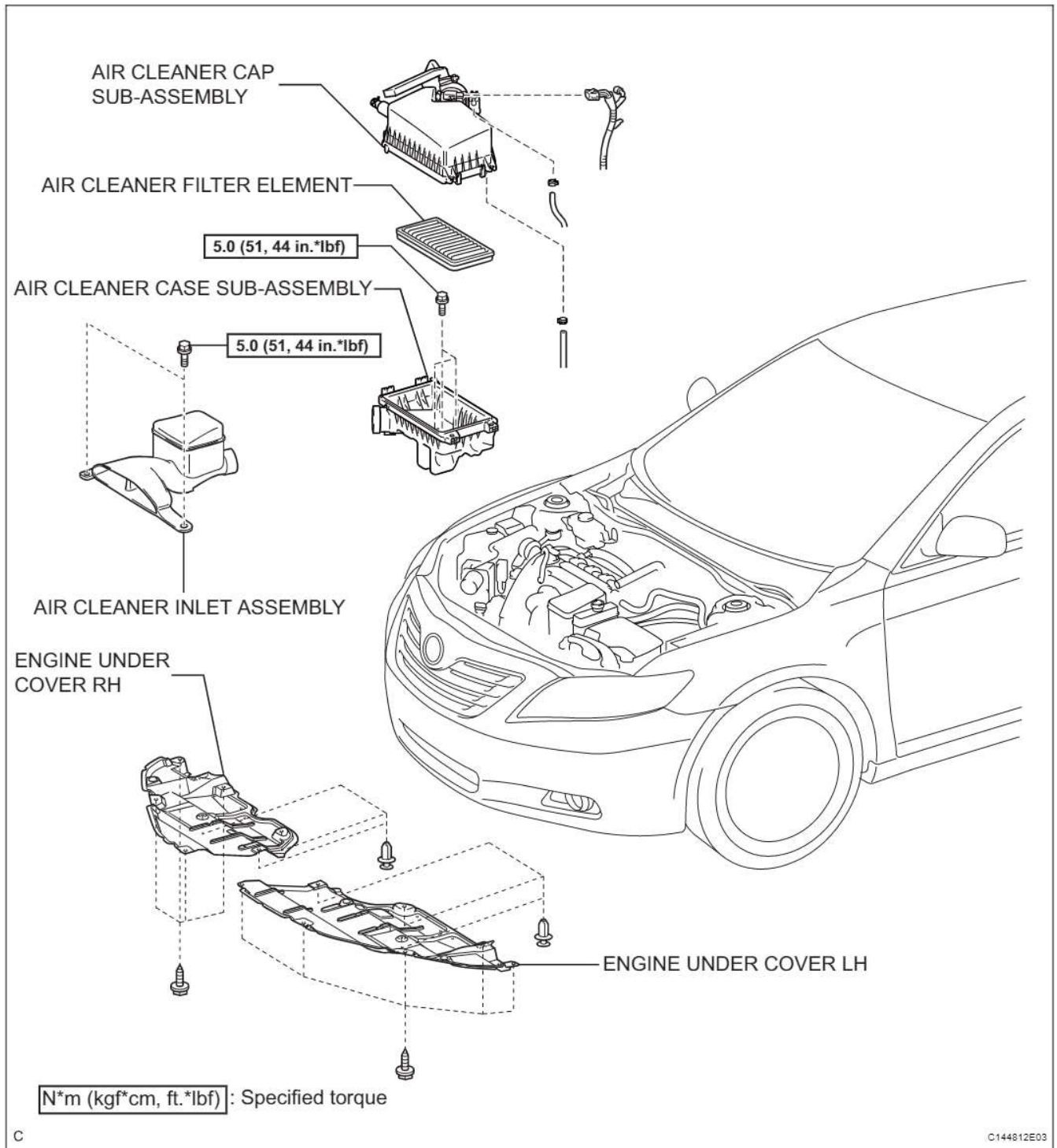
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P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY

HX-39

TRANSAXLE CONTROL CABLE ASSEMBLY

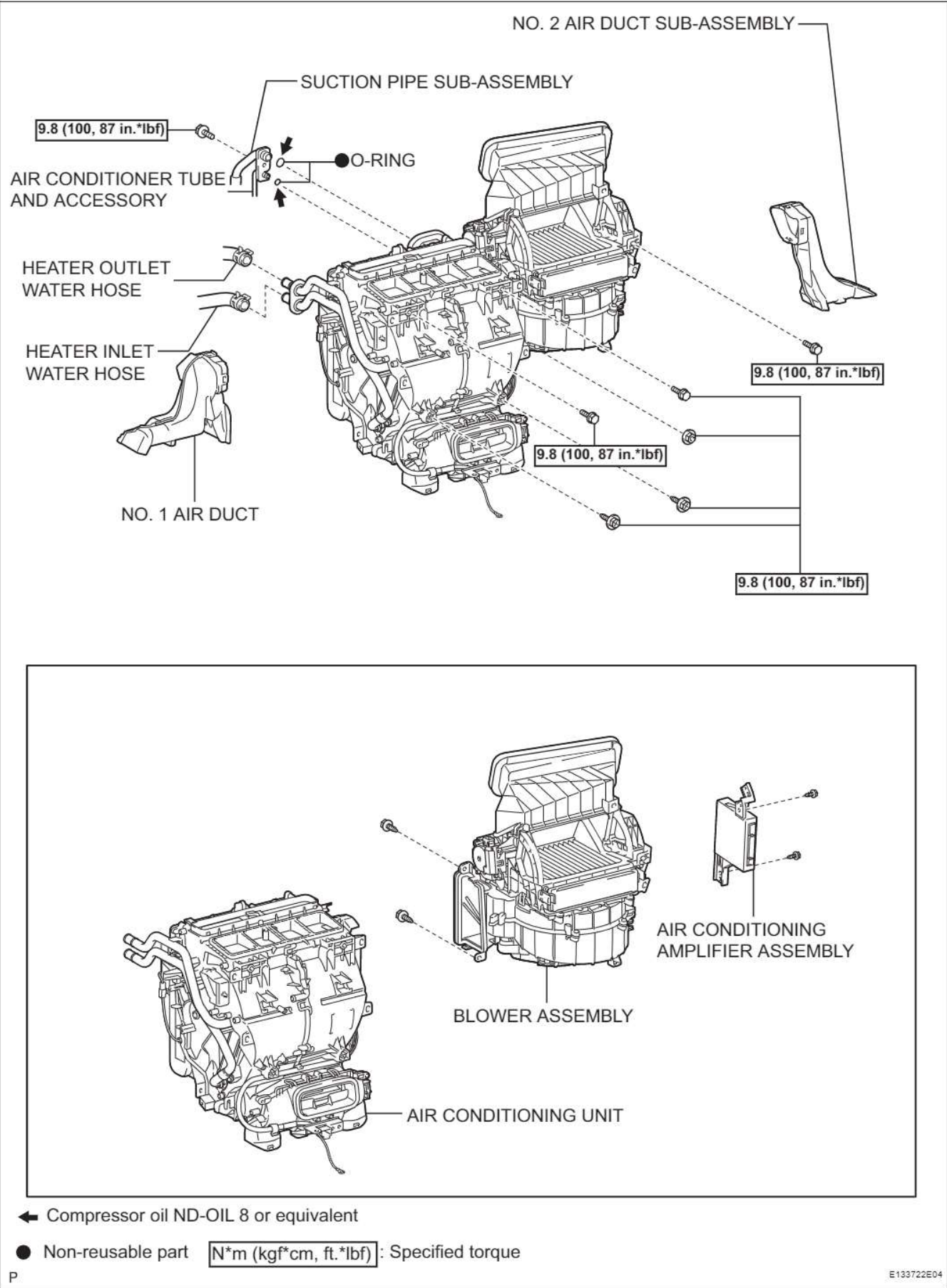
COMPONENTS



HX

HX-40

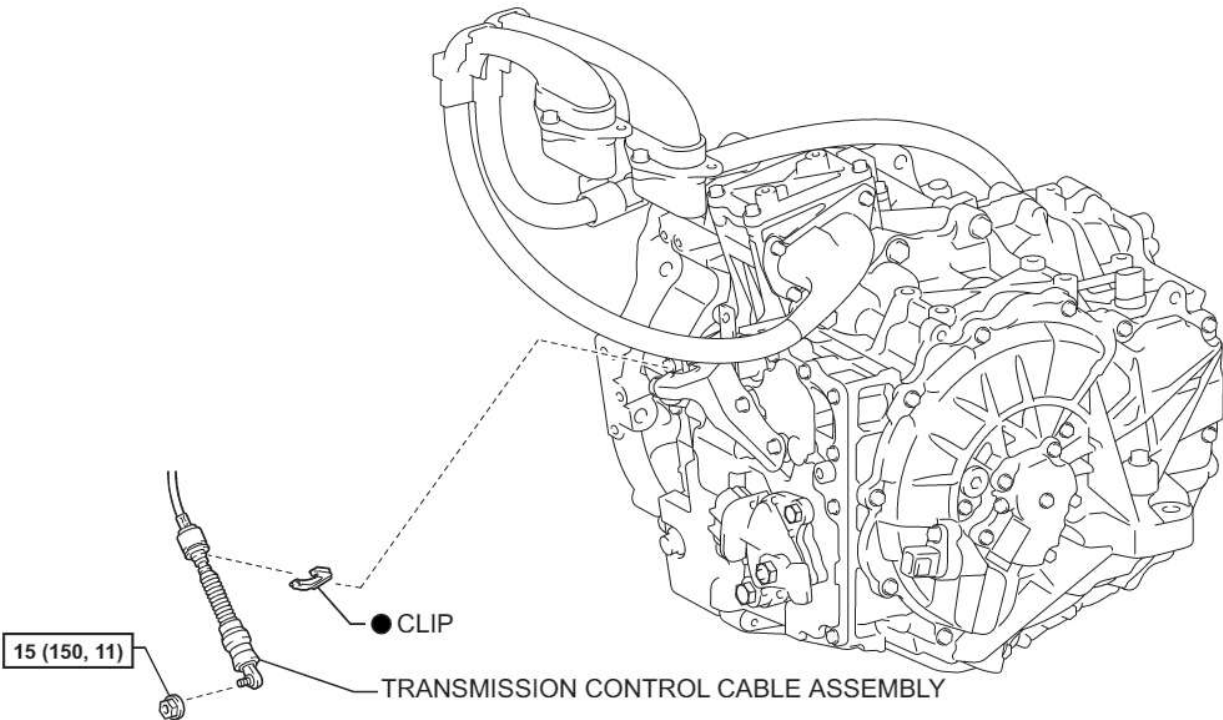
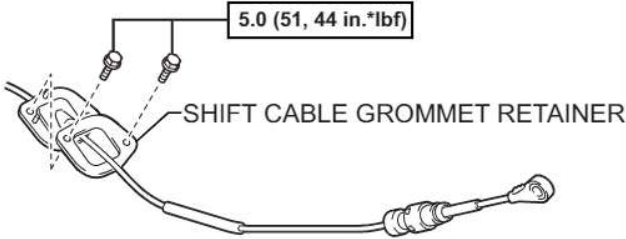
P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY



P311 HYBRID TRANSMISSION / TRANSAXLE – TRANSAXLE CONTROL CABLE ASSEMBLY

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CABIN SIDE:



[N*m (kgf*cm, ft.*lbf)]: Specified torque

● Non-reusable part

HX